

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

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

## TIMBER HARVESTING PLAN

STATE OF CALIFORNIA  
DEPARTMENT OF FORESTRY AND  
FIRE PROTECTION, RM - 63 (01-00)

THP Name: Schmidbauer THP

NOV 14 2008  
FOR ADMIN. USE ONLY  
THP No 1-08-166 HUM  
Dates Rec'd NOV 12 2008  
Date Filed NOV 24 2008  
Date Approved APR 16 2009  
Date Expires APR 14 2012  
Extensions 1)  2)

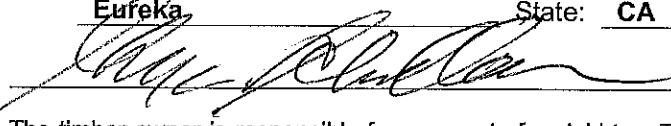
This Timber Harvesting Plan (THP) form, when properly completed, is designed to comply with the Forest Practice Act (FPA) and Board of Forestry and Fire Protection rules. See separate instructions for information on completing this form.  
NOTE: The form must be printed legibly in ink or typewritten. 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 OWNERS OF RECORD: George Schmidbauer

Address: P.O. Box 143  
City: Eureka State: CA Zip: 95501 Phone: 707-443-7024

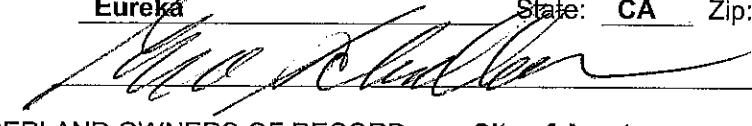
Signature: 

Date: Nov 5, 2008

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.

2a. TIMBERLAND OWNERS OF RECORD: George Schmidbauer

Address: P.O. Box 143  
City: Eureka State: CA Zip: 95501 Phone: 707-443-7024

Signature: 

Date: Nov 5, 2008

2b. TIMBERLAND OWNERS OF RECORD: City of Arcata

Address: 737 F Street  
City: Arcata State: CA Zip: 95518 Phone: 707-822-5951

Signature: Notified via certified letter

Date: \_\_\_\_\_

3. LICENSED TIMBER OPERATOR(S): To be amended

Lic No. \_\_\_\_\_

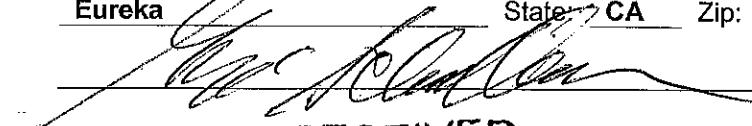
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ Phone: \_\_\_\_\_

Signature: 

Date: \_\_\_\_\_

4. PLAN SUBMITTER: George Schmidbauer

Address: P.O. Box 143  
City: Eureka State: CA Zip: 95501 Phone: 707-443-7024

Signature: 

Date: Nov 5, 2008

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Section I

## SECTION I - GENERAL INFORMATION

### Additional Timber Owners

1b. TIMBER OWNER(S) OF RECORD: City of Arcata  
Address: 737 F Street  
City: Arcata State: CA Zip: 95518 Phone: 707-822-5951

Signature: Notified via certified letter Date: \_\_\_\_\_

Tress will need to be harvested to facilitate the use of the seasonal road and proposed landing split by the City of Arcata and the Schmidbauer's property. Any harvesting of trees or removal of vegetation is for the sole propose of the use of the roads, and therefore no stocking report will be required on the City of Arcata's property.

### Additional Timberland Owners

2c. TIMBERLAND OWNER(S) OF RECORD: John L. & Margaret Tilstra  
Address: PO BOX 3108  
City: Collegedale State: TN Zip: 37315 Phone: 423-443-3489

Signature: Notified via certified letter Date: \_\_\_\_\_

d. TIMBERLAND OWNER(S) OF RECORD: Robert E. & Carol Morris  
Address: 39960 Alderpoint Road  
City: Blocksburg State: CA Zip: 95514 Phone: 707-777-1993

Signature: Notified via certified letter Date: \_\_\_\_\_

e. TIMBERLAND OWNER(S) OF RECORD: Clayton R & Natal Chadwell  
Address: 1981 Fickle Hill Road  
City: Arcata State: CA Zip: 95521 Phone: 707-442-6504

Signature: Notified via certified letter Date: \_\_\_\_\_

Timber operations proposed to occur on property owned by John and Margaret Tilstra are in the form of the use of approximately 500 feet of existing skid trail. Additionally an existing seasonal road and an existing landing are proposed for use.

Timber operations proposed to occur on property owned by Robert and Carol Morris are in the form of the installation of drainage structures and facilities on an existing seasonal road. Road work points on the Morris's timberland are described in Section II – Item 24.

Timber operations proposed to occur on property owned by Clayton and Natal Chadwell are in the form of the use of an existing landing.

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5. 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: **To be Amended**  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ Phone: \_\_\_\_\_

- 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 The LTO is responsible until the Work Completion Report is signed. Thereafter, the Timberland Owners are responsible for erosion control maintenance. The erosion control maintenance period on permanent and seasonal roads and associated landings that are not abandoned shall be three years.

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

Date of THP approval, or:  \_\_\_\_\_ (date)

- b. Expected date of completion of timber operations:

3 years from date of THP approval, or:  \_\_\_\_\_ (date)

7. The timber operation will occur within the: **Coast Forest District**.

Special Treatment Area(s), identify:

8. Location of the timber operation by legal description:

Section	Township	Range	Acreage	County	Assessor's Parcel Number
34	6N	1E	26	Humboldt	
TOTAL ACREAGE (Logging Area Only):		26			

Base and Meridian: **Humboldt**.

USGS Quad Name(s) and Date(s): **Arcata, South 1959 (Photo revised 1972)**

Planning Watershed(s): **1110.000502, Mad River Slough, Version 2.2**

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?

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?

- 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(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)?

13. RPF preparing the THP: Chris Carroll RFP No.: 2628  
Address: Timberland Resource Consultants – 165 South Fortuna Blvd  
City: Fortuna State: CA Zip: 95540 Phone: 707-725-1897

- a.  Yes  No I have notified the plan submitter(s), in writing, of their responsibilities pursuant to Title 14 CCR 1035 of the Forest Practice Rules. **See letters in Section V.**
- 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. **See letters in Section V.**
- 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(e).
- c.  Yes  No I have been retained as the RPF, available to provide professional advice to the LTO 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.
- d. 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 listed RPF is responsible for the preparation of this THP, including the fieldwork requiring an RPF or supervised designee. The RPF shall meet with the LTO on-site prior to the commencement of timber operations to advise the LTO of sensitive conditions and provisions of the plan pursuant to 14 CCR 1035.2, and to specifically explain and describe mitigation measures for all Map Points listed in the THP.**

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

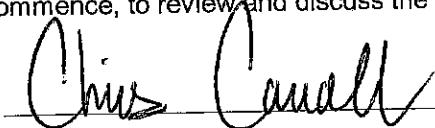
**I do not assume responsibility for additional work requiring an RPF when the services of the RPF who prepared the plan are not specified by the Forest Practice Rules, unless said work is performed by myself or under my direction.**

- f. After considering the rules of the Board of Forestry 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 THP 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: 11-6-08

## SECTION II - PLAN OF TIMBER OPERATIONS

### 14. SILVICULTURE METHODS

- 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 913.11. If more than one method or treatment will be used, show boundaries on map and list approximate acreage for each.

#### Unevenaged Management (14 CCR 913.2):

Group Selection: 26 ac.

Total acres: 26

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 14 CCR 1034(x)(12).

#### Group Selection for Site II Lands:

1. At least 80% of the stocked plots must meet the Basal Area stocking standards of 14 CCR § 913.2(a)(2)(A), which is 75 ft<sup>2</sup> of conifer basal area per acre.
  2. Not more than 20% of the stocked plots may meet stocking standards utilizing the 300 point count standard with trees that are at least 10 (ten) years old.
  3. The residual stand shall contain sufficient trees to meet at least the basal area, size, and phenotypic quality of tree requirements specified under the seed tree method, which is 15 ft<sup>2</sup> of conifer basal area per acre of seed trees, which are 18 inches dbh or greater.
  4. Within any THP, small group clearings under the selection method shall be separated by a logical logging area.
  5. Following completion of timber operations (including site preparation) not more than 20 percent of the THP area harvested by this method shall be covered by small group clearings.
  6. No group openings shall occur on slopes exceeding 65% and/or within any ELZs within the THP area.
- c.  Yes  No Will even-age regeneration step units be larger than those specified in the rules (20 acre tractor, 30 acre cable)? If Yes, provide substantial evidence that the THP contains measures to accomplish any of subsections (A) - (E) of 14 CCR 913.1(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.
- 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.
1. Harvest trees within the selection areas and WLPZs shall be marked by the RPF with a blue paint stripe at approximately breast height elevation above ground level on at least two sides, plus a paint base mark near ground level.
  2. In-lieu of marking harvest trees, boundaries of the small group openings may alternatively be flagged with "SILVICULTURAL BOUNDARY" and pink flagging.

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Section II

COAST AREA OFFICE  
RESOURCE MANAGEMENT

#### 14. SILVICULTURE METHODS (CONT.)

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: **Conifer and hardwood trees for saw logs, chip logs, fuel wood, slash, and split products.**

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 Group A species.

g. Other instructions to LTO concerning felling operations.

1. **To the fullest extent possible and with due consideration given to topography, lean of trees, local obstructions and safety factors, trees to be harvested shall be felled to lead in a direction away from adjacent parcels, power lines, watercourses, equipment exclusion zones, conifer stocking, snags, and decadent and deformed trees of value to wildlife per 14CCR 895.1.**

#### 2. Green Wildlife Tree Retention Plan:

a. The LTO shall retain and protect where feasible green wildlife trees as described below. Green wildlife trees shall be retained only where they exist with preference given to the retention of trees that are larger in diameter than that of the surrounding stand.

b. **Goose-pen conifer and hardwoods with large basal cavities, internal hollows, internal decay, or butt rot.**

c. **Hardwoods with complex crowns consisting of large lateral limbs and epicormic branching. Examples are large, limby madrone, tanoak, and chinquapin.**

d. **Residual growth conifers with dead tops, broken tops, forked tops, large limbs or reiterations.**

3. **The timber fallers, to ensure that no raptor nests have been missed, shall carefully inspect every tree. Fallers shall be instructed by the LTO to cease falling and contact the RPF if a potential nest or roosting colony is detected.**

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.

j. If the rehabilitation method is chosen provide a regeneration plan as required by 14 CCR 913(934, 954).4(b).

#### 15. PESTS

a.  Yes  No Is this THP within an area that the Board of Forestry 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 917.9(a).

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).

## 15. PESTS (CONT.)

### Sudden Oak Death Information

This THP's timberlands contain a component of hardwoods that are susceptible to Sudden Oak Death (SOD). However, there have been no detections of SOD to date on the landowner's property. An announcement was made on July 9, 2002 that SOD was positively identified on California bay (*Umbellularia californica*) in a residential area of Redway, CA. This announcement resulted in Humboldt County being added to the list of counties included in the regulated area subject to quarantine restrictions limiting movement of host plant material. Humboldt County has been declared by the Board of Forestry to be in a "Zone of Infestation" (ZOI).

Plants, plant parts, unprocessed wood, wood products, and other products of Sudden Oak Death hosts, created as a result of timber harvest, cannot be moved within or outside of regulated counties infested with SOD without written CDF approved harvest document containing specific information which meets CDFA regulations. SOD language in existing THP/NTMPs will need to be reviewed prior to movement of host material to determine if it meets current CDFA regulations. If necessary, the THP/NTMP will need to be amended to include current regulations prior to movement of host material.

All SOD host material with bark can only be moved off-site with a valid compliance agreement (ref. CCR Div. 4, Sub Chap. 6, Section 3700). Compliance agreements are valid for a period of one year. For THPs and NTMPs, a compliance agreement requires the inclusion of specific mitigations and language in the THP/NTMP document. For compliance with CDFA regulations, and for the THP/NTMP to act as a compliance agreement, THP/NTMPs located in the SOD ZOI need to address mitigation measures to avoid movement of host material (ref. also 14CCR 917.9 and 917.10). If more than one year has passed since THP/NTMP approval, the THP/NTMP will need to be amended by either 1) indicating that it is the plan submitter's intent to continue to use the plan as the compliance agreement, or 2) by amending into the plan a compliance agreement which meets CDFA requirements. Amendments to the THP/NTMP relying on the plan as the compliance agreements will be expected to contain current information and mitigations.

- A. California counties known at the time of plan submittal to harbor SOD include Alameda, Contra Costa, Humboldt, Marin, Mendocino, Monterey, Napa, San Mateo, Santa Clara, San Francisco, Santa Cruz, Solano, Lake, and Sonoma, plus Curry County in southern Oregon.
- B. List of all known SOD host species from: [http://www.aphis.usda.gov/plant\\_health/plant\\_pest\\_info/pram/](http://www.aphis.usda.gov/plant_health/plant_pest_info/pram/) (Revised 05-30-2008)  
*Acer macrophyllum* (Bigleaf maple); *Acer pseudoplatanus* (Planetree maple); *Aesculus hippocastanum* (Horse chestnut); *Adiantum aleuticum* (Western maidenhair fern); *Adiantum jordanii* (California maidenhair fern); *Aesculus californica* (California buckeye); *Arbutus menziesii* (Madrone); *Arctostaphylos manzanita* (Manzanita); *Calluna vulgaris* (Scotch heather); *Camellia* spp. (Camellia - all species, hybrids and cultivars); *Castanea sativa* (Sweet chestnut); *Fagus sylvatica* (European beech); *Frangula californica* =*Rhamnus californica* (California coffeeberry); *Frangula purshiana* =*Rhamnus purshiana* (Cascara); *Fraxinus excelsior* (European ash); *Griselinia littoralis* (Griselinia); *Hamamelis virginiana* (Witch hazel); *Heteromeles arbutifolia* (Toyon); *Kalmia latifolia* (Mountain laurel); *Lithocarpus densiflorus* (Tanoak); *Lonicera hispida* (California honeysuckle); *Laurus nobilis* (Bay laurel); *Malanthemum racemosum* =*Smilacina racemosa* (False Solomon's seal); *Michelia doltsopa* (Michelia); *Parrotia persica* (Persian ironwood); *Photinia fraseri* (Red tip photinia); *Pieris floribunda* and *Pieris floribunda* x *japonica* & and all hybrids of *P. floribunda* (Mountain Andromeda); *Pieris formosa* and *P. formosa* x *japonica* & and all hybrids of *P. formosa* (Himalaya Andromeda); *Pieris japonica* & and all hybrids of *P. japonica* (Japanese Pieris); *Pseudotsuga menziesii* var. *menziesii* (Douglas-fir); *Quercus agrifolia* (Coast live oak); *Quercus chrysolepis* (Canyon live oak); *Quercus cerris* (European turkey oak); *Quercus falcata* (Southern red oak); *Quercus ilex* (Holm oak); *Quercus kelloggii* (California black oak); *Quercus parvula* var. *shrevei* (Shreve's oak); *Rhododendron* spp. (Rhododendron (including azalea) – includes all species, hybrids and cultivars); *Rosa gymnocarpa* (Wood rose); *Salix caprea* (Goat willow); *Sequoia sempervirens* (Coast redwood); *Syringa vulgaris* (Lilac); *Taxus baccata* (European yew); *Trientalis latifolia* (Western starflower); *Umbellularia californica* (California bay laurel, pepperwood, Oregon Myrtle); *Vaccinium ovatum* (Evergreen huckleberry); *Viburnum* spp. (Viburnum – all species, hybrids and cultivars)
- C. Host material will be removed from the THP area in the form of conifer and hardwood trees for saw logs, chip logs, fuel wood, slash, and split products. Regulated parts of coast redwood and Douglas-fir include needles, twigs, and branches less than 1" in diameter, while bark, logs and sawdust are not regulated.

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## 15. PESTS (CONT.)

1. Material that has been debarked can move without restrictions anywhere.
  2. All material with bark must move under a compliance agreement. An approved THP will act as that compliance agreement.
  3. Articles greater than 4" in diameter can move within the regulated area under a compliance agreement. The compliance agreement will contain information on what is being moved, where it originated, where it is being transported, and in what time frame it will be moved.
- D. If any host material is to be moved outside of the regulated area, it will not be moved from the regulated area until appropriate State and Federal permits are obtained. A copy of the permit shall be amended into the plan prior to movement of any host materials authorized under the permit. (Note: A THP may not be substituted for compliance agreements or permits when material is to be moved outside of the regulated area.)
- E. For movement of host material within the regulated area, this THP, once approved, will act as that compliance agreement.
1. The potential destination of regulated host materials are:
    - a) Agwood Mill & Lumber, Ukiah, CA
    - b) Willits Redwood, Willits, CA
    - c) C W Mills, Fortuna, CA
    - d) Evergreen Pulp, Samoa, CA
    - e) Harwood, Branscomb, CA
    - f) Mad River Lumber, Arcata, CA
    - g) Mendocino Forest Products, Ukiah, CA
    - h) Redwood Empire, Cloverdale, CA
    - i) Resale Lumber Products, Arcata, CA
    - j) Schmidbauer Lumber Inc., Eureka, CA
    - k) Sierra Pacific Industries, Arcata, CA
    - l) California Redwood Company, Korbel, CA
    - m) South Coast Lumber, Brookings, OR
    - n) The Humboldt Redwood Company, Scotia, CA
  2. Chips or other material originating from host plant parts, less than 4" in diameter, will be moved in a closed container. Movement of host material greater than 4" in diameter does not require a closed container.
  3. The LTO shall take reasonable steps to check and remove any host plant debris from log trucks, "crummies," loaders, pickups etc. leaving the plan area to ensure that host plant material does not move from the site. This would include branches, limbs, leaves, etc. stuck in log loads as well as leaves of hosts encased in mud.
- F. The THP, once approved, will act as the compliance agreement for one calendar year. If operations are not completed within 1 year of approval, the THP will be updated with current mitigations to meet compliance. The RPF responsible for providing advice to the LTO will be responsible for amending the plan. Operations may begin after 1-year has passed since plan approval, but host material may not be moved off of the harvest area until the plan is satisfactorily amended and updated as necessary to serve as the compliance agreement, or another form of compliance agreement which conforms to State and federal regulations is amended into the THP/NTMP.
- G. The RPF responsible for providing advice to the LTO shall inform the LTO regarding the current SOD hosts and what comprises the regulated area, prior to the start-up of initial operations and throughout the active periods of the life of the THP.
- H. Information on the disease and its hosts, can be obtained from the California Oak Mortality Task Force web page at [www.suddenooakdeath.org](http://www.suddenooakdeath.org). Information regarding the California Department of Food & Agriculture regulation (i.e. Section 3700), which includes the commodities covered and restrictions required can be seen at <http://pi.cdfa.ca.gov/pqm/manual/455.htm>

## 16. HARVESTING PRACTICES

Indicate type of yarding system & equipment to be used: \*Tractor operations restrictions apply to ground based equipment.

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

\*All ground based areas may be cable yarded at the option of the LTO.

## 17. EROSION HAZARD RATING

Indicate Erosion Hazard Ratings present on THP. (Must match EHR worksheets). See EHR Worksheet in Section V.

Low  Moderate  High  Extreme

## 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.

1. **Timing for soil stabilization measures within the WLPZ, and within any ELZ or EEZ designated for watercourse or lake protection:** For areas disturbed 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 30, 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.
2. **Within the WLPZ, and within any ELZ or EEZ designated for watercourse or lake protection, the traveled surface of logging roads shall be treated to prevent waterborne transport of sediment and concentration of runoff that results from timber operations.** Treatment may consist of, but not limited to, rocking, outsloping, rolling dips, cross drains, waterbars, slope stabilization measures, or other practices appropriate to site-specific conditions.
3. **The treatment for other disturbed areas within the WLPZ, and within any ELZ or EEZ designated for watercourse or lake protection, including:** (A) areas exceeding 100 contiguous square feet where timber operations have exposed bare soil, (B) Road approaches to watercourse crossings between the drainage facilities closest to the crossing, (C) road cut banks and fills, and (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, shall be grass seeded and mulched with straw or fine logging slash. Grass seed (barley seed) shall be applied at a rate exceeding 100 pounds per acre. Straw mulch shall be applied in amounts sufficient to provide at least 2"- 4" depth of straw with minimum 90% coverage. Logging slash may be substituted for straw mulch, or specifically required at certain locations as stated in the THP, provided the depth, texture, and ground contact are equivalent to at least 2"- 4" straw mulch.
4. **Within the WLPZ, and within any ELZ or EEZ designated for watercourse or lake protection, where the undisturbed natural ground cover cannot effectively protect beneficial uses of water from timber operations, the ground shall be treated with slope stabilization measures described in Number 3 above per timing described in Number 1 above.**
5. **Sidecast or fill material extending more than 20 feet 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 treated with slope stabilization measures described in Number 3 above. Timing shall occur per Number 1 above unless outside of a WLPZ, or ELZ or EEZ designated for watercourse or lake protection, in which completion date is October 15.**

## 18. SOIL STABILIZATION

6. Sidecast or fill material extending more than 20 feet in slope distance from the outside edge of a landing which has access to a watercourse or lake shall be treated with slope stabilization measures described in Number 3 above. Timing shall occur per Number 1 above unless outside of a WLPZ, or ELZ or EEZ designated for watercourse or lake protection, in which completion date is October 15.
7. 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) the 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.

## 19. LAYOUTS

- 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 [or helicopter] yarding? If Yes, specify the location and for what purpose the equipment will be used?

The use of tractors on existing designated skid roads is proposed in the Cable-Longline areas as depicted on the THP Map on page 22. Tractors and/or a small cable yarder may be used for yarding logs to the skid roads, and skidding them to the landings as depicted on the THP Maps.

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%?

Slopes over 65%, have been designated as Cable-Longline areas on the THP map. In such areas the following shall apply:

1. The LTO shall be confined to the existing skid trails as shown on the THP map and flagged in the field by the RPF.
2. Where feasible, skid roads shall be outsloped and waterbars shall discharge into undisturbed vegetation.
3. Following operations, all skid trails designated within Cable-Longline areas shall be waterbarred to a "High" erosion hazard rating.
4. At Map Point D the LTO shall treat the approach of the skid trail to the truck road with packed slash. Additionally a waterbar shall be placed above this treatment area to direct drainage away from the trail approach. This practice is designed to eliminate the potential for trail runoff from reaching the watercourse at Map Point 9.
5. At Map Point E the three "Skid Trail" flags hung together signify the end of the proposed trail segment. A large waterbar shall be constructed immediately to the north (downhill side) of the end of the trail to prevent any potential erosion into the Class III watercourse below.

Designated trails have been flagged in the field with yellow "Skid Trail" flagging and are mapped on the THP Map. See further description, including Explanation and Justification in Addendum 21, Section III of this THP.

- 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 914.2(f)(2)(i) or (ii)?

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- 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?
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 914.9 in Section III. List specific instructions to the LTO below.

## 23. WINTER OPERATIONS

- a.  Yes  No Will timber operations occur during the winter period? If Yes, complete 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.  Yes I choose the in-lieu option as allowed in 14 CCR 914.7(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.  Yes I choose to prepare a winter operating plan per 14 CCR 914.7(b).

### Winter Operating Plan

1. The erosion hazard rating for the THP area is moderate.
2. No mechanical site preparation is proposed.
3. The yarding system for the THP is ground based and cable.
4. This Winter Operating Plan is for the Wet Weather Period (WWP). The WWP is for all timber operations occurring from October 15 to November 15 and April 1 to May 1. This THP proposes no operation in the Winter Period as per 14 CCR 895.
5. Within the WLPZ treatments to stabilize soils, minimize soil erosion, and prevent the discharge of sediment into waters deleterious to aquatic species or the quality and beneficial uses of water, or that threaten to violate applicable water quality requirements shall be applied as described in Section II, Item 18, and 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. Furthermore, all tractor roads shall have drainage and/or drainage collection and storage facilities installed prior to either i) the start of any rain which causes overland flow across or along the disturbed surface within a WLPZ and within any ELZ or EEZ designated for watercourse protection, or ii) 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.
6. Precipitation will be in the form of rain.
7. Heavy equipment operations during the WWP shall only occur during an "extended period of low antecedent soil moisture". This is defined as a condition in which saturated soil conditions do not exist and a stable operating surface does exist. "Saturated Soil Conditions" and "Stable Operating Surface" are defined below in Number 10.
8. The silvicultural system for this THP is group selection. Ground cover following operations will consist of merchantable conifer stocking within the single-tree selection areas (no less than 80% of THP area), and slash, understory vegetation, and non-merchantable conifer stocking within the small group openings (no more than 20% of THP area).
9. Timber operations may occur within the WLPZ during the WWP given the conditions detailed under point 7 and 10 allow.

## 23. WINTER OPERATIONS (Cont.)

10. Use of logging roads, tractor roads, or landings shall not take place at any location where "Saturated Soil Conditions" exist, where a "Stable Operating Surface" does not exist, or when visibly turbid water from the road, landing, or skid trail surface or inside ditch may reach a watercourse or lake.

**SATURATED SOIL CONDITIONS:** Saturated soil conditions means that site conditions are sufficiently wet that timber operations displace soils in yarding or mechanical site preparation areas or displace road and landing surface materials in amounts sufficient to cause a turbidity increase in drainage facilities that discharge into Class I, II, III, or IV waters, or in downstream Class I, II, III, or IV waters that is visible or would violate applicable water quality requirements. In yarding and site preparation areas, this condition may be evidenced by: (a) reduced traction by equipment as indicated by spinning or churning of wheels or tracks in excess of normal performance, (b) inadequate traction without blading wet soil, (c) soil displacement in amounts that cause visible increase in turbidity of the downstream waters in a receiving Class I, II, III, or IV waters, or in amounts sufficient to cause a turbidity increase in drainage facilities that discharge into Class I, II, III, or IV waters, or (d) creation of ruts greater than would be normal following a light rainfall. On logging roads and landing surfaces, this condition may be evidenced by (1) reduced traction by equipment as indicated by spinning or churning of wheels or tracks in excess of normal performance, (2) inadequate traction without blading wet soil, (3) soil displacement in amounts that cause visible increase in turbidity of the downstream waters in receiving Class I, II, III, or IV waters, or in amounts sufficient to cause a turbidity increase in drainage facilities that discharge into Class I, II, III, or IV waters, (4) pumping of road surface materials by traffic, or (5) creation of ruts greater than would be created by traffic following normal road watering, which transports surface material to a drainage facility that discharges directly into a watercourse. Soils or road and landing surfaces that are hard frozen are excluded from this definition.

**STABLE OPERATING SURFACE:** Stable operating surface means that throughout the period of use, the operating surface of a logging road or landing does not either (1) generate waterborne sediment in amounts sufficient to cause a turbidity increase in downstream Class I, II, III, or IV waters, or in amounts sufficient to cause a turbidity increase in drainage facilities that discharge into such waters or, that is visible or would violate applicable water quality requirements; or (2) channel water for more than 50 feet that is discharged into Class I, II, III, or IV waters.

11. Unstable areas exist within the THP area. Hauling may occur across the unstable feature (Map Point B) during the WWP, given the conditions detailed under point 10 above allow. No other timber operations are proposed in any unstable area during the WWP.
12. Road, landing, and skid trail construction or reconstruction may occur during the WWP given the conditions detailed under point 10 above allow.

## 24. ROADS AND LANDINGS

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.  Yes  No Will new or reconstructed roads be wider than single lane with turnouts?

b.  Yes  No Are logging roads proposed in areas of unstable soils or known slide-prone areas?

Map Point B corresponds to a 150 foot segment of seasonal truck road proposed for reconstruction within the margins of an unstable area. See Item 24b, Section III for explanation and justification. Please refer to page 27.1 for a detailed site plan for this site. At this location the following shall apply:

1. The LTO shall reconstruct the lower spur road along the existing midslope bench.
2. The LTO shall reconstruct the upper spur by ramping up to the upper road. This pitch may be up to 20% to avoid excessive fill placement.

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## 24. ROADS AND LANDINGS (Cont.)

3. No imported fill material shall be placed within the margins of the landslide. Where fills are required, they shall be no greater than 5' in depth.
  4. Both segments of road shall be no greater than 16' in width. Additionally, the reconstructed road segments shall be outsloped to the greatest extent feasible.
  5. The LTO shall meet onsite with the RPF or designee prior to operations to verify the margins of the landslide and locations of the proposed road realignment.
- c.  Yes  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.  Yes  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.  Yes  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.  Yes  No Will any roads or watercourse crossings be abandoned?
- g.  Yes  No Are exceptions proposed for flagging or otherwise identifying the location or roads to be constructed?
- h.  Yes  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.

At Map Point C, a landing is proposed for construction that requires substantial excavation. This landing will not exceed one-quarter acre in size. If needed, spoils generated from the excavation of this landing may be used for fill material at Map Point B (See Item 24b above). This site may also be a storage site for end-hauled material.

- i.  Yes  No Are any landings proposed in areas of unstable soils or known slide prone areas?
- j.  Yes  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.  Yes  No Will any landings be abandoned?

### Road Use Specifications

1. The maximum width of the running surface of seasonal roads within the THP (not including turnouts) shall be 14 feet.
2. The erosion control maintenance period on seasonal roads and associated landings that are not abandoned in accordance with 14CCR 923.8 shall be three years. Road maintenance may include the removal of vegetation and/or trees outside of a WLPZ but within 25 feet of the edge of the appurtenant road surface.
3. During timber operations, road running surfaces in the logging area shall be treated as necessary to prevent excessive loss of road surface materials by, but not limited to, rockling and watering.
4. Drainage ditches shall be maintained to allow free flow and minimize soil erosion.
5. Each drainage structure shall be maintained and repaired as needed to prevent blockage of and to provide adequate carrying capacity. Where not present, new trash racks shall be installed if there is evidence that woody debris is likely to significantly reduce flow through a drainage structure.

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24. ROADS AND LANDINGS (Cont.)

25. 6. Inlet and outlet structures, additional drainage structures (including ditch drains), and other features to provide adequate capacity and to minimize erosion of road and landing fill and sidecast to minimize soil erosion and minimized slope instability shall be repaired, replaced, or installed wherever such maintenance is needed to protect the quality and beneficial uses of water.
7. Use of logging roads, tractor roads or landings shall not take place at any location where saturated soil conditions exist, where a stable logging road or landing operating surface does not exist, or when visibly turbid water from the road, landing, or skid trail surface or inside ditch may reach a watercourse or lake.

Table 1. Maximum distance between waterbreaks on roads and skidtrails (in feet)

Erosion Hazard Rating	Road or Trail Gradient (%)			
	10% or less	11 - 25%	26 - 50%	Over 50%
Extreme	100'	75'	50'	50'
High	150'	100'	75'	50'
Moderate	200'	150'	100'	75'
Low	300'	200'	150'	100'

THP Map Points (as shown on the Appurtenant Road Map) - Underlined crossings are 1611 notification points:

1. Temporary Class I crossing on existing seasonal truck road. A fill crossing exists at this location now. The head of a Class I (DWS) spring is located just above the crossing. The temporary culvert shall be a minimum of 6 inches and shall be long enough that backfill cannot reach the inlet or outlet of the pipe. Additionally, the LTO shall place 2-3 hay bales in the channel below the outlet of the culvert to act as a siltation control measure. The LTO shall monitor this site periodically and replace the bales when needed. The LTO shall remove crossing in accordance with "Watercourse Crossing Removal" specifications below following the completion of hauling on this segment of road or prior to the start of the Winter period, which ever occurs first. Following the removal of the crossing, the LTO shall install Drain Rock in line with the channel from the head of the crossing down to the break in slope below the crossing. This measure is proposed to address potential down cutting.
2. Existing seasonal road above a Class III watercourse. At this location the LTO shall maintain the existing dip (location flagged in the field). No sidecasting shall occur with the ELZ. Prior to the winter period this segment of road shall be treated per Section II, Item 18, Number 3 to the nearest waterbreak on either side of the dip.
3. Temporary Class III crossing on existing skid trail. Prior to the winter period following use of the crossing, remove crossing in accordance with "Watercourse Crossing Removal" specifications below.
4. Cut bank seep on existing seasonal truck road. This location shall be drained by either outsloping the road or by waterbars. If water is present during operations a culvert may be installed to direct water across road and eliminate saturated soil conditions. The LTO shall take care to ensure that drainage from the seep can not deliver to the Class III watercourse to the north (Map Point 5). If saturated soil conditions persist following the grading and draining of the road, rock may need to be applied to maintain a stable operating surface.
5. Permanent Class III crossing on existing seasonal truck road. A 12" CMP is installed at this location. This crossing drains a small Class III watercourse and the drainage from a residential tennis court (which is located to the east of the crossing) via a 6" CMP welded to the inlet of the pipe. The outlet has a large downspout which ends with a coupled "T" pipe energy dissipater. The LTO shall ensure the inlet is free and clear of all debris prior to the start of the Winter Period.
6. Temporary Class III crossing on existing skid trail. The LTO shall maintain the existing channel configuration by placing hay bales and/or compacted slash into the channel prior to use. Fill may be backfilled over this material. Prior to the start of the Winter Period the LTO shall remove all material from the channel. Additionally, the LTO shall take care to minimize excavation of the toe of the cutbank on the west approach of the crossing to the greatest extent feasible (area between Points 6 and 7).

24. ROADS AND LANDINGS (Cont.)

- 25.
7. Temporary Class III crossing on existing skid trail. This watercourse has been diverted by the trail and has created a gully for approximately 150 feet to where it blows out at a fill slope failure. Prior to the Winter Period the LTO shall dip out the crossing to eliminate any future diversion potential. The fill slope of the trail shall be dug down in-line with the channel and lined with rock. Additionally, three large waterbars shall be installed between the crossing and the blow out to break up the drainage of the trail.
  8. Class III crossing on existing seasonal truck road. A Class III watercourse drains off a large cutbank before draining across the road onto steep slopes. Due to the steepness of the cutbank a Rock Ford is proposed at this location. Prior to the start of the Winter Period, a rock ford shall be installed at this location in accordance with the "Rock Ford Specifications" stated below.
  9. Class III crossing on existing seasonal truck road. Large amounts of dirt have been piled in this location, likely moved from the old log landing to the west and from an old skid trail that once switched back in the channel of the Class III (immediately below the truck road crossing). Currently the channel has settled into the western side of the material before crossing the road, at which point it has down cut into the fill material of the road and old skid trail creating large gullies that lead into the channel. It is not feasible to restore the channel to its original position mainly due to the immense amount of excavation required to do so. It appears that most of the unstable fill has eroded away and the down cutting has slowed in recent years.

Prior to the start of the winter period, the LTO shall rock the entire basin (of the road prism), filling in the gully with rock to establish the inboard running surface. Beginning 10' to the west of the channel and continuing 50' to the east of the channel. This practice will minimize disturbance and armor the road prism from future erosion.

10. Fill slope failure on existing seasonal truck road. A diversion from a swale to the northwest of the crossing is discharging onto the failure and is likely the cause of the failure, which has resulted in a debris slide. To facilitate hauling the LTO shall retreat into the existing cut bank to the minimum extent necessary for hauling. The re-graded section of road shall be outsloped and waterbreaks shall be established that direct overland flow away from the failed fill slope. The LTO shall not drift any material over the failed fill slope. Organic-free spoils may be incorporated in the surfaces of existing full bench roadways. Any other spoils produced shall be end hauled to a location outside of a WLPZ or ELZ and stabilized as per Item 18. Perched material along the crown of the slide shall be removed extending a minimum of 3 feet beyond the head of the slide. Waterbreaks shall be established before the failure on the northwestern approach. Additionally the LTO shall install a large dip at the outlet of the swale to capture all drainage from the swale and direct it across the road.
11. At this location a Humboldt crossing exists within a Class III watercourse. Prior to the start of the Winter Period following the first year of operations, the LTO shall hand install a waterbar placed immediately down grade of the crossing to prevent diversion down the skid trail.

The following Map Points occur on the Arcata Community Forest:

- ACF01: Temporary Class II crossing on existing seasonal truck road. A temporary culvert of no less than 18" in diameter shall be used for the crossing. Prior to the start of the Winter Period, a Rock Ford shall be installed at this location in accordance with the "Rock Ford Specifications" stated under Item 26.
- ACF02: Existing landing between Map Points ACF01 and ACF03. Portions of this landing occur within a Class II WLPZ. No log landing shall occur at this location. The LTO shall be permitted to operate equipment within this area to facilitate the construction of Map Points ACF01 and ACF03. This landing shall be used to minimum extent feasible to facilitate the proposed operations. Rock needed for the construction of the Rock Ford may be stockpiled in this location prior to installation of the ford. Additionally, it is proposed to stockpile spoils generated from the construction of the bridge approach to Map Point ACF03. This material shall be placed on the uphill side of the landing in the wedge outside of the WLPZ (as flagged in the field) and stabilized as per Item 18.

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24. ROADS AND LANDINGS (Cont.)

25.

All areas of exposed bare mineral soil, including road surfaces, shall be considered within a WLPZ for the purpose of determining timing and treatment of soil stabilization measures described in Item 18. For clarity, the areas requiring such treatment are all areas between ACF01 and ACF03.

ACF03: Temporary Class II crossing on existing seasonal truck road. It appears as if a Humboldt crossing was once located here though most of the material has since washed out from the crossing. The banks appear to have stabilized though portions of the old road prism can be seen on the southern approach. It is proposed to cross this watercourse with a minimum 54 foot rail car temporary bridge. The northern approach shall be realigned to the west of the crossing following portions of an existing skid road grade as flagged in the field.

Abutment locations have been flagged in the field. Beginning approximately 30 feet back from the northern abutment location, the LTO shall lay back the slope to achieve a favorable road grade leading to the bridge. This will require the slope to be cut down approximately 4-6 feet in depth. This shall be achieved with an excavator on the break in slope above the crossing and the material shall be placed upslope of the creek's floodplain on the existing terrace where spoils have been traditionally stockpiled (Map Point ACF02). During reconstruction, no fill material shall be placed, pushed or side-casted into the direction of, or into the watercourse.

The northern abutment shall be compacted dirt, utilizing the existing bench as flagged in the field. A few logs shall be placed below the abutment to prevent it from sinking. The southern abutment shall be constructed of logs built up from the existing bench as flagged in the field.

The bridge is designed to remain installed for the life of the THP. At the completion of operations the abutments shall be removed and the approaches stabilized as per item 18. The through-cut portion of the newly aligned northern approach shall be treated with compacted slash, with a waterbar at the break in slope directing drainage away from the approach. See diagram on page 45.

Alternatively, the bridge may be installed as a permanent crossing. If the permanent crossing alternative is chosen, the north and south abutments shall be constructed of concrete blocks in the same relative positions the temporary abutments are proposed. Additionally, the treatment for the through-cut portion of the northern approach shall be rock instead of packed slash. If this option is chosen, it shall be reflected in the approved 1611 with DFG.

For the roadway between ACF01 – ACF03 the following shall apply during the reconstruction of the road: road widths shall be minimized to the greatest extent feasible to facilitate hauling. The existing road surfaces shall be used for reconstruction when and where feasible. Balanced cut-and-fill building techniques shall be employed as conditions allow.

ACF04: Fill slope failure on existing seasonal truck road. Approximately 40 feet of road has been horizontally displaced by as much as 2 feet. At this location the LTO shall ramp into and out of the down-dropped segment. The ramps shall be constructed by grading through the lateral flanks of the displaced surface. No fill shall be placed on the dropped down surface and the displaced portion of road shall not be backfilled. Alternatively, the LTO may retreat the road way into the existing cut bank to the minimum extent necessary for hauling. Organic-free spoils may be incorporated in the surfaces of existing full bench roadways. Any other spoils produced shall be end hauled to a location outside of a WLPZ or ELZ and stabilized as per Item 18.

ACF05: Fill slope failure on existing seasonal truck road. Approximately 30 feet of road has been altered by a recent debris slide which has removed 5 feet of the outer edge of the roadway. To facilitate hauling the LTO shall retreat into the existing cut bunk to the minimum extent necessary for hauling. The re-graded section of road shall be outsloped and waterbreaks shall be established that direct overland flow away from the failed fill slope. The LTO shall not drift any material over the failed fill slope. Organic-free spoils may be incorporated in the surfaces of existing full bench roadways. Any other spoils produced shall be end hauled to a location outside of a WLPZ or ELZ and stabilized as per Item 18.

24. ROADS AND LANDINGS (Cont.)

25.

- ACF06: Fill slope failure on existing seasonal truck road. Approximately 60 feet of road has been narrowed due to movement below the outboard edge of the road. To facilitate hauling the LTO shall retreat into the existing cut bunk to the minimum extent necessary for hauling. The re-graded section of road shall be outsloped and waterbreaks shall be established that direct overland flow away from the failed fill slope. The LTO shall not drift any material over the failed fill slope. Organic-free spoils may be incorporated in the surfaces of existing full bench roadways. Any other spoils produced shall be end hauled to a location outside of a WLPZ or ELZ and stabilized as per Item 18.

The following Map Points occur on the Morris property:

- MOR01: Fill slope failure on existing seasonal truck road. Approximately 50 feet of road has been narrowed due to the slippage of fill material below the outboard edge of the road. To facilitate hauling the LTO shall retreat into the existing cut bunk to the minimum extent necessary for hauling. The re-graded section of road shall be outsloped and waterbreaks shall be established that direct overland flow away from the failed fill slope. The LTO shall not drift any material over the failed fill slope. Organic-free spoils may be incorporated in the surfaces of existing full bench roadways. Any other spoils produced shall be end hauled to a location outside of a WLPZ or ELZ and stabilized as per Item 18.

- MOR02: Temporary Class III crossing on existing seasonal truck road. Prior to the Winter Period following use of the crossing, remove crossing in accordance with "Watercourse Crossing Removal" specifications below.

- MOR03: Temporary Class III crossing on existing seasonal truck road. Prior to the Winter Period following use of the crossing, remove crossing in accordance with "Watercourse Crossing Removal" specifications below.

Watercourse Crossing Removal:

1. Fills shall be excavated to form a channel that is as close as feasible to the natural watercourse grade and orientation and is wider than the natural channel.
2. The excavated material and any resulting cut bank shall be sloped back from the channel and stabilized to prevent slumping and to minimize soil erosion as described in Section II, Item 18. Channel side slopes shall not exceed 2:1, unless adjacent natural slopes are steeper.
3. All bare mineral soil located on approaches to truck and tractor road watercourse crossings up the edge of the WLPZ or the nearest drainage facility, whichever is farthest, shall be treated per Section II, Item 18.

Rock Ford Specifications:

1. The truck road shall dip into and out of the rock ford to minimize diversion potential.
2. The crossing shall be constructed with clean, native rock that is large enough to remain in place during peak flows. Rock size shall vary relative to the size of the watercourse.
3. The crossing's inlet and outlet shall be rock armored to resist downcutting and erosion.
4. The entire width of the crossing's approaches shall be rock armored to a minimum of 6-feet from the watercourse transition line at either side of the crossing.
5. If the crossing is expected to carry water any time during the course of operations a minimum 6-inch temporary pipe shall be installed. Following operations, the temporary culvert and any non-rock fill shall be removed and the rock ford shall be constructed as described above.

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

- 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 14 CCR 916.4 (936.4, 956.4) of the WLPZ rules (revised 11/13/2000: CDF Findings\ 99 COHO Considerations\ Final Rule Language (3)) and/or Table I in 14 CCR 916.5 for each watercourse. Specify if Class III or IV watercourses have WLPZ, ELZ or both.
- b.  Yes  No Are there any Class I watercourses (or Class II watercourses that can be feasibly restored to Class I) identified that present opportunity for habitat restoration?
- c.  Yes  No Are there any watercourse crossings that require mapping per 14 CCR 1034 (x)(7)?
- d.  Yes  No Will tractor road watercourse crossings involve the use of a culvert? If Yes, state minimum diameter for each culvert (may be shown on map). **Minimum culvert size for all temporary crossings when water is present 6 inches diameter.**
- e.  Yes  No Is this THP Review Process to be used to meet Department of Fish and Game CEQA review requirements? If Yes, attach the 1603 Addendum below or at the end of this Section. Provide the background information and analysis in Section III.

### Class II Watercourse Protection Measures:

1. **WLPZ Width:** The Class II WLPZ width shall be 50 feet on sideslopes less than 30%, 75 feet on sideslopes 30-50%, and 100 feet on sideslopes greater than 50%. These zones will be flagged prior to PHI with blue and white striped "Watercourse and Lake Protection Zone" flagging along with straight pink/red flagging.
2. **WLPZ Retention & Canopy Cover:** To protect water temperature, filter strip properties, upslope stability, and fish and wildlife values, at least 50% of the total canopy covering the ground shall be left in a well distributed multi storied stand composed of a diversity of species similar to that found before the start of operations. The WLPZ shall be composed of at least 25% of the existing overstory conifers. Where they exist, at least two living conifers per acre at least 16 inches diameter breast height and 50 feet tall within 50 feet of the watercourse will be retained. Within the WLPZ, at least 75% surface cover and undisturbed area shall be retained to act as a filter strip for raindrop energy dissipation, and for wildlife habitat. Harvest trees within the WLPZ shall have a base mark placed below the cut line and shall be marked by the RPF or his designee prior to PHI. No hardwoods shall be removed from within the Class II WLPZ. The only exception shall be the harvest of any hardwoods that are judged to be a safety hazard to the LTO.
3. **Salvage Logging:** No salvage logging or removal of downed woody debris shall occur within the WLPZ.
4. **Channel Zone:** There shall be no timber operations within the channel zone except at approved crossings. "Channel zone" means that area that includes a watercourse's channel at bankfull stage and a watercourse's floodplain, encompassing the area between the watercourse transition lines.

### Class III Watercourse Protection Measures:

1. **The Class III ELZ width shall be no less than 25 feet on sideslopes from 0-30% and no less than 50 feet on sideslopes greater than or equal to 30%.**
2. **Any soil deposited in any Class III watercourses shall be removed and debris deposited shall be removed or stabilized prior to October 15th or following operations that day between October 15th and November 15th.**
3. **Channel Zone:** There shall be no timber operations within the channel zone except at approved crossings. "Channel zone" means that area that includes a watercourse's channel at bankfull stage and a watercourse's floodplain, encompassing the area between the watercourse transition lines.
4. **Equipment Limitations:** Heavy equipment may enter into the ELZ at approved crossings. Landing operations may occur within a Class III ELZ only when such operations are located on an existing seasonal truck road.

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Section II

**26: WATERCOURSE AND LAKE PROTECTION ZONE (WLPZ) AND DOMESTIC WATER SUPPLY PROTECTION MEASURES (Cont.)**

**Domestic Water Sources:** Two domestic watercourse intakes occur in the channel below Map Point 1 as shown on the THP Map. The two domestic watercourses occur outside of the THP area and thus no timber harvesting is proposed within the Class I WLPZ. See Map Point 1 above for mitigations associated with the crossing. Another water source is located near the appurtenant road on the Morris Property. No timber harvesting is proposed in the vicinity of these intakes, though seasonal hauling is proposed on the road. See Item 28 below for more information.

**27. "IN LIEU" WLPZ PRACTICES**

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.

**Map Point A: An existing skid trail is proposed for use along the margins of a Class II WLPZ at this location.**

1. Any sidecasting shall be directed away (to the east) of the WLPZ.
2. This skid trail shall be stabilized pursuant to Item 18, Section II.
3. The LTO shall waterbar the skid trail using the High Erosion Hazard Rating specifications.
4. See further description, including Explanation and Justification in Addendum 27a, Section III of this THP.

**Map Point ACF02: An existing landing is proposed for limited use within a Class II WLPZ at this location.**

1. This practice is described under Map Point ACF02 above.
  2. See further description, including Explanation and Justification in Addendum 27a, Section III of this THP.
- 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 Increase or 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 50% of the overstory canopy in the WLPZ?
- i.  Yes  No Retention of 50% of the understory in the WLPZ?
- j.  Yes  No Are any additional in-lieu or any alternative practices proposed for watercourse or lake

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 1032.10? If Yes, 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.

See Item 28, Section III for detailed information regarding domestic water sources.

At Map Point 1 special consideration shall be given to the domestic water sources below the crossing. Mitigations for this crossing are detailed above under Item 24.

At Map Point E a water line is buried immediately to the east of the designated skid trail. If the waterline is damaged during operations the LTO shall immediately repair line.

At Map Point "F" a well is located just to the north east of the landing proposed for use on the Chadwell property. This location has been flagged in the field with ELZ.

At Map Point "G" a domestic water intake is located approximately 22 feet below the traveled surface of the road. At this location the LTO shall maintain the in-sloped configuration of the road prism.

29.  Yes  No Is any part of the THP area within a Sensitive Watershed as designated by the Board of Forestry? 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?

### 30. HAZARD REDUCTION

- 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.

1. All woody debris created by timber operations greater than one inch but less than eight inches in diameter within 100 feet of all permanently located structures maintained for human habitation (see  symbol on THP Map) shall be removed or piled and burned; all slash created between 100-200 feet of permanently located structures maintained for human habitation shall be lopped for fire hazard reduction, chipped, or piled and burned.
2. Within 100 feet of the edge of the traveled surface of Fickle Hill Road and 50 feet of the edge of the traveled surface of the permanent private road (in the northern-central portion of the THP), slash created and trees knocked down by road construction or timber operations shall be treated by lopping for fire hazard reduction, piling and burning, chipping, burying or removal from the zone.
3. If lopping for fire hazard reduction, lopping shall be defined as severing and spreading slash so that no part of it generally remains more than thirty inches above the ground.
4. When the option of burning piles or concentrations of slash is chosen to meet the slash treatment requirements as specified in these rules, such burning shall be done as follows: (a) Piles and concentrations shall be sufficiently free of soil and other noncombustible material for effective burning.

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Section II

### 30. HAZARD REDUCTION (Cont.)

(b) The piles and concentrations shall be burned at a safe time during the first wet fall or winter weather or other safe period following piling and according to laws and regulations. Piles and concentrations that fail to burn sufficiently to remove the fire hazard shall be further treated to eliminate that hazard. All necessary precautions shall be taken to confine such burning to the piled slash.

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

### 32. BIOLOGICAL AND CULTURAL RESOURCES

- 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. **See Section III – Addendum 32**

#### **Northern Spotted Owl Mitigation Measures per 14 CCR 919.9(e) of the Forest Practice Rules:**

1. No timber operations shall occur until a valid NSO technical assistance has been obtained from the USFWS for the proposed THP and amended into the plan.  
\* Please see initial technical assistance incorporated on pages 113.1 + 113.2.
2. Surveys for the NSO will be conducted in conformance with the USFWS approved NSO survey protocols.
3. One historic NSO activity center from at least the past three years is known to be located within 1.3 miles of the THP area (HU586). An "Activity Center" is defined as sites identified through surveys conducted to protocol resulting in either the presence of nesting, pair status or resident single status as defined in the northern spotted owl protocol (USFWS 1992). The final determination of an activity center is at the discretion of the USFWS.
4. If a northern spotted owl activity center is located, the following standard protection measures will be adopted. (Note: these measures can be modified through subsequent TA with the USFWS.)
  - a. The habitat protection zone for NSOs shall consist of the area within 1000 ft. radius of a tree, or trees, containing a nest or supporting an activity center.
  - b. No timber operations shall occur within a 500 ft. radius of an NSO activity center, and the habitat qualities of functional nesting habitat will be maintained within the area between the 500 ft. radius and 1000 ft. radius of an NSO activity center.
  - c. A minimum of 500 acres of suitable NSO habitat shall be retained within an area out to 0.7 mile, surrounding a tree, or trees, containing a nest or supporting an activity center. Less than 50% of the retained area may be operated on in any given year, depending on the amount of pre-harvest suitable NSO habitat present within 0.7 mile of the tree, or trees, containing a nest or supporting an activity center.
  - d. A minimum of 1,336 acres of suitable NSO habitat shall remain post harvest within the area out to 1.3 miles surrounding a tree, or trees, containing a nest or activity center.
  - e. Suitable NSO Habitat is defined as follow:
    - Nesting-Roosting Habitat includes ≥60% canopy cover of trees ≥11 inches diameter at breast height (dbh).
    - Foraging Habitat includes ≥40% canopy cover of trees ≥11 inches dbh and basal area ≥ 75 ft<sup>2</sup>/acre of trees ≥11 inches dbh.

## 32. BIOLOGICAL AND CULTURAL RESOURCES (Cont.)

- f. The critical period for NSO breeding is between February 1<sup>st</sup> and August 31<sup>st</sup>. During this period, no timber operations are permitted within 0.25 mile of a known activity center.
- g. Subsequent technical assistance letters or consultations received from the USFWS for the proposed project shall be amended into the approved plan. No timber operations shall occur until all amendments, whether substantial deviations or minor deviations, have been submitted to the Director and acted upon in accordance with the applicable Forest Practice Rules.

**The following sensitive animal species may occur within the THP:** bald eagle, northern spotted owl, southern torrent salamander, northern red-legged frog, foothill yellow-legged frog, tailed frog, Del Norte salamander, goshawk, golden eagle, osprey, sharp-shinned hawk, Cooper's hawk, great blue heron, ruffed grouse, Vaux's swift, purple martin, Townsend's western big eared bat, red tree vole, pacific fisher, and white tree vole.

**General Animal Protection Measures:** If any of the animal species listed above are detected prior to or during operations, a default mitigation measure of avoidance will be implemented within the vicinity of the detection. The LTO shall cease operations and contact the RPF immediately for consultation. The appropriate mitigation shall be applied based on 14 CCR 919.2 and 919.3. When required, DFG and CALFIRE shall be notified and any consultation and/or additional mitigation shall be amended into the plan.

**Raptor Mitigation Measures:** The final check for nesting raptors will be provided by the timber fallers. The timber fallers, to insure that no raptor nests have been missed, shall carefully inspect every tree. Fallers shall be instructed by the LTO to cease falling and contact the RPF if a potential nest or roosting colony is detected.

**Rare Plant Mitigation Measures:** A botanical survey has been conducted within the THP area. See survey report in Section V. No rare plants were identified during surveys.

- 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.

## 33. SNAGS

- a.  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 retained, uncut, within the proposed THP area, except for those snags which pose a potential threat to human safety as required by the California Division of Occupational Safety and Health.

## 34. LATE SUCCESSIONAL FOREST

- Yes  No Are any Late Successional 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. NON-LISTED SPECIES WILDLIFE PROTECTION

- Yes  No Are any other provisions for wildlife protection required by the rules? If Yes, describe.

## 36. ARCHAEOLOGICAL RESOURCE

- 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?

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### 36. ARCHAEOLOGICAL RESOURCE (Cont.)

- 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. GROWTH AND YIELD INFORMATION

- 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. SPECIAL INSTRUCTIONS: Describe any special instructions or constraints which are not listed elsewhere in THP Section II.

1. The Department will not enforce conditions stated in Section V of the THP, which pertain to NCRWQCB General Waste Discharge requirements, unless those same conditions are subject to the Forest Practice Act/Rules and included as enforceable provisions in Section II of the THP.
2. The RPF of record, Chris Carroll, will be responsible for notifying the Department of the commencement of timber operations per 14CCR 1035.4. The RPF shall contact Fortuna Resource Management, clerical staff (Juliana Gilman) @ Juliana.Gilman@fire.ca.gov.
3. Non-merchantable downed woody debris (old decaying logs & downed trees) shall be retained within the THP area. Recently blown down trees containing sound wood may be salvaged from outside of the WLPZ and Class III Channel Zones.
4. The LTO shall protect, to the greatest extent feasible, all snags and decadent and deformed trees of value to wildlife from felling and skidding operations. These larger and older trees and snags are easily identifiable within the greater second growth stand.
5. During timber operations, the LTO shall not do either of the following:
  - a. Place, discharge, or dispose of or deposit in such a manner as to permit to pass into waters of the state, any substances or materials, including, but not limited to, soil, silt, bark, slash, sawdust, or petroleum, in quantities deleterious to fish, wildlife, beneficial functions of riparian zones, or the quality and beneficial uses of water;
  - b. Remove water, trees, or large woody debris from a watercourse or lake, the adjacent riparian area, or the adjacent flood plain in quantities deleterious to fish, wildlife, beneficial functions of riparian zones, or the quality and beneficial uses of water."
6. Wet Weather Operations (Outside of the Winter Period). Use of logging roads, tractor roads, or landings shall not take place at any location where "Saturated Soil Conditions" exist, where a "Stable Operating Surface" does not exist, or when visibly turbid water from the road, landing, or skid trail surface or inside ditch may reach a watercourse or lake.
7. Flagging Code
  1. Class II WLPZs are identified by blue and white flagging labeled "WLPZ" hung with solid pink or red flagging.
  2. Class III ELZs and other ELZs are identified by yellow and white flagging labeled "ELZ" hung with solid pink or red flagging.
  3. Designated skid trails are identified by yellow flagging labeled "Skid Trail".
  4. Truck roads are identified by orange flagging labeled "Truck Road".

### 38. SPECIAL INSTRUCTIONS (Cont.)

8. THP Point 01, reference page 13. This crossing shall only be used for one season during the life of the THP. This practice was adopted on the PHI, with the intention of further mitigating potential impacts to the domestic water source below the crossing. The LTO shall be allowed to install and remove this crossing – as specified below – only once. The LTO shall take note that this will limit access to that portion of the plan which occurs to the east of the eastern most Class II watercourse, including the area above THP Point 02. Operations shall be planned in accordance with this requirement.
9. Noise Impact Mitigations:
  - a. No felling or other chainsaw operations, yarding, or loading shall occur prior to 7:00 am.
  - b. No timber operations shall occur on Federally recognized holidays except emergency repairs to roads, crossings, or erosion controls.
10. Along the primary seasonal road, specifically the road owned by the City of Arcata and Schmidbauer, special consideration shall be given to the apparent trespass issue in terms of road drainage. When ever feasible, roads should be outsloped and berms built up during operations shall be removed prior to the completion of operations. A preference to rolling grade breaks over waterbars shall be given when ever feasible. When waterbars are required, they should be constructed in such away that activities such as mountain bike traffic will not break them down with in the erosion control period. Larger than normal waterbars should also be installed where skid trails intercept the seasonal road to discourage any unauthorized traffic from using them.
11. THP Map Point B, reference page 11 & 12. Prior to beginning work at this location, the LTO shall notify the RPF. The RPF will then be required to notify the local CALFIRE inspector and CGS who may wish to conduct active inspections of this site.
12. Prior to operations, the LTO shall obtain a copy of the school bus schedule. No hauling shall occur along Fickle Hill Road when school busses are in use.

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### DIRECTOR OF FORESTRY AND FIRE PROTECTION

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

By:

\_\_\_\_\_  
Leslie Markham  
(Printed Name)  
\_\_\_\_\_  
Leslie Markham  
(Signature)

By:

\_\_\_\_\_  
Deputy Chief  
(Title)  
\_\_\_\_\_  
April 15 2009  
(Date)



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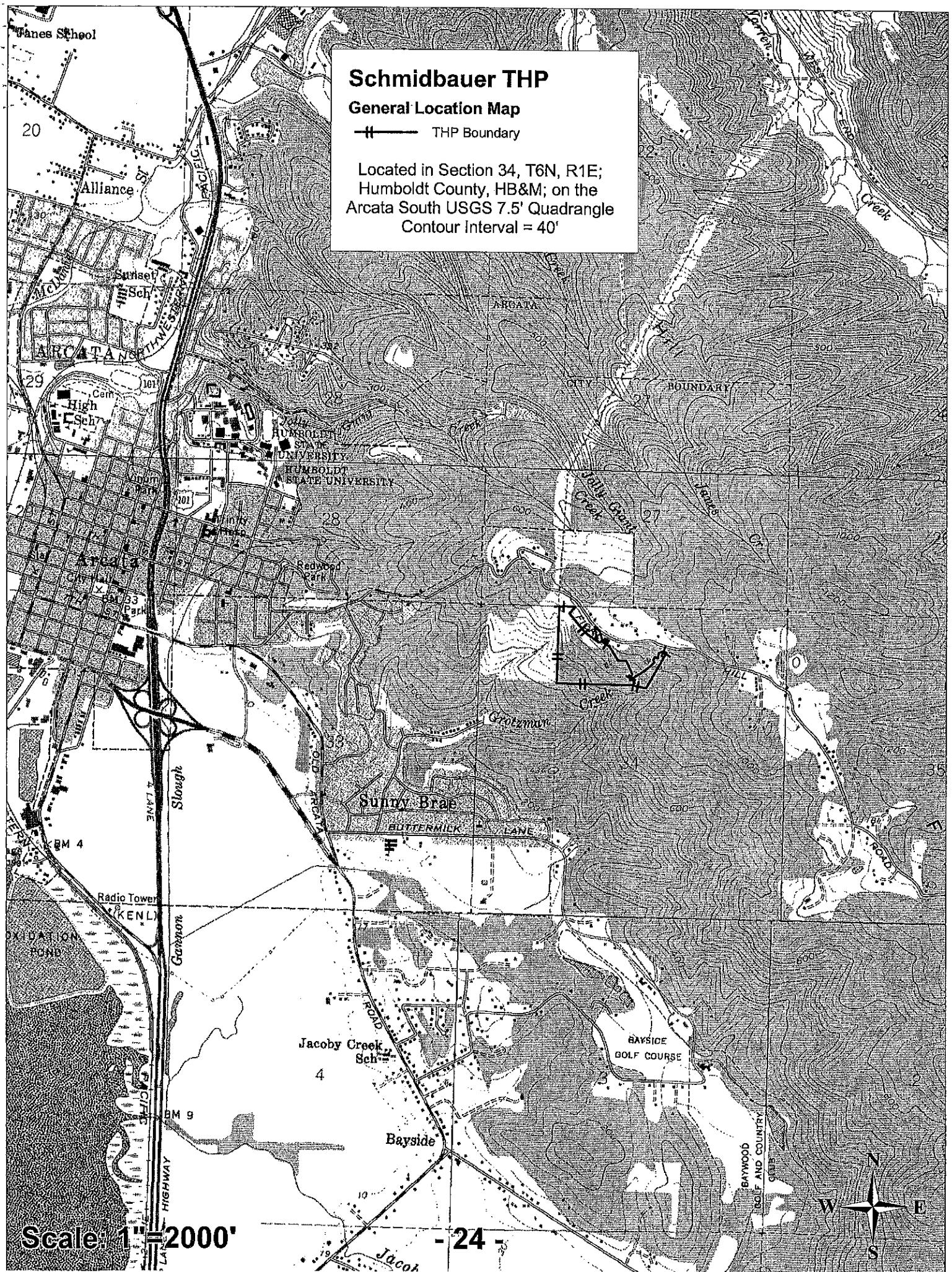
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# Schmidbauer THP

## General Location Map

THP Boundary

Located in Section 34, T6N, R1E;  
Humboldt County, HB&M; on the  
Arcata South USGS 7.5' Quadrangle  
Contour Interval = 40'



Scale: 1"=2000'

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## Schmidbauer THP

### THP Map

- Property Boundary
- THP Boundary

### Watercourses

- Class I (DWS)
- Class III
- Class II
- Class (DWS)

### Roads

- Fickle Hill Road (County)
- Existing Seasonal
- Skid Trail
- Existing Permanent
- Landings

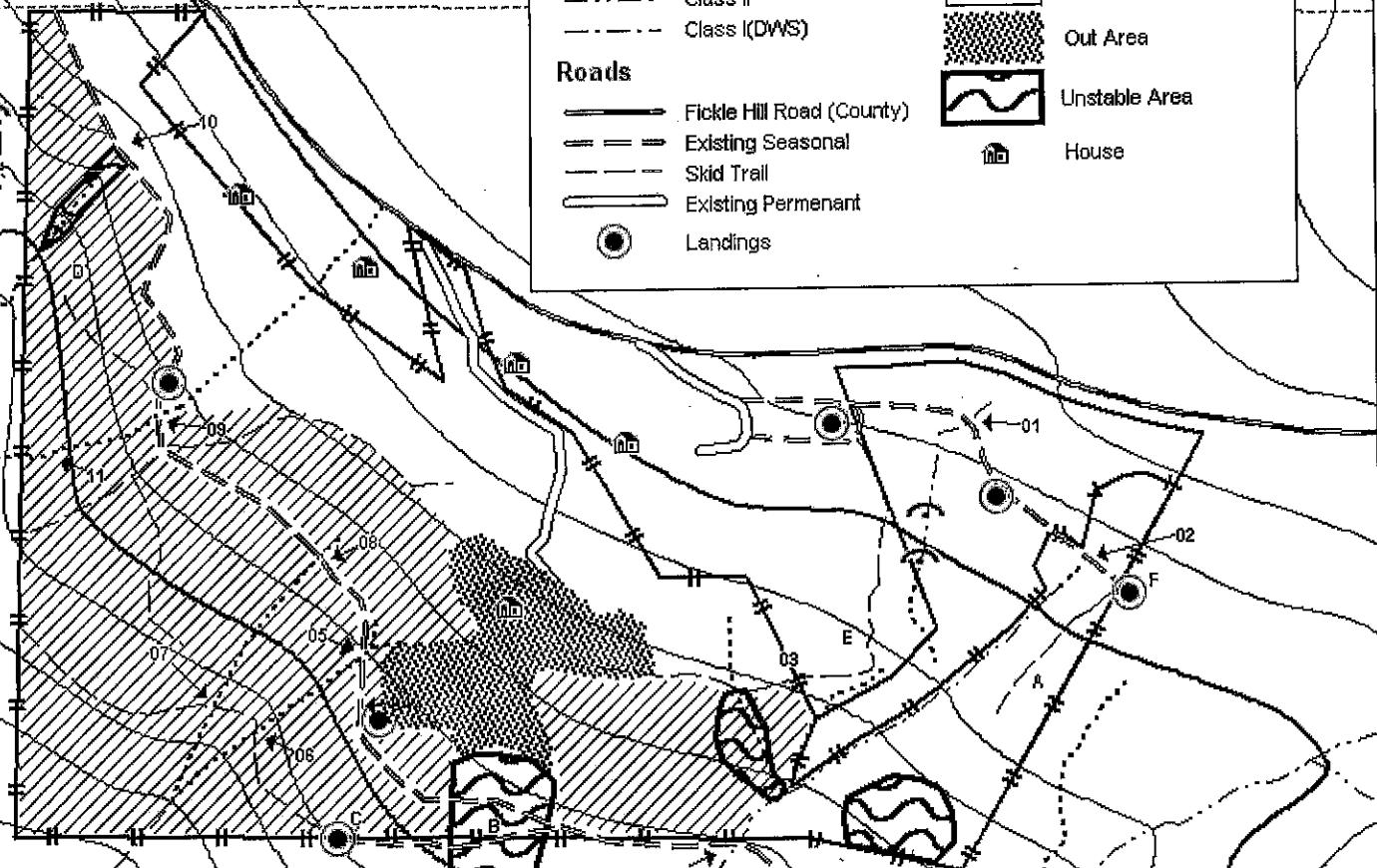
Located in Section 34,  
T6N, R1E, HB&M; Humboldt  
County, digitized from the  
Arcata South USGS 7.5' Quad  
Contour Interval = 40'

### Yarding Method

- Cable-Longline
- Tractor
- Out Area
- Unstable Area



House



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Scale: 1"=300'

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# Schmidbauer THP

## Appurtenant Road Map

Located in Section 34,  
T6N, R1E, HB&M; Humboldt  
County, digitized from the  
Arcata South USGS 7.5' Quad

Property Boundary  
THP Boundary

### Watercourses

- Class I (DWS)
- Class III
- Class II
- Class I (DWS)

### Roads

- Fickle Hill Road (County)
- Existing Seasonal
- Skid Trail
- Existing Permanent

Landings

### Yarding Method

- Cable-Longline
- Tractor
- Out Area
- Unstable Area
- House

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Scale: 1" = 420'

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# Schmidbauer THP

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## Ownership Map

- Property Line
- THP Boundary
- Approximate Ownership Boundaries

John & Margaret  
Tilstra

Clayton and Natol  
Chadwell

City of Arcata

Robert & Carol Morris

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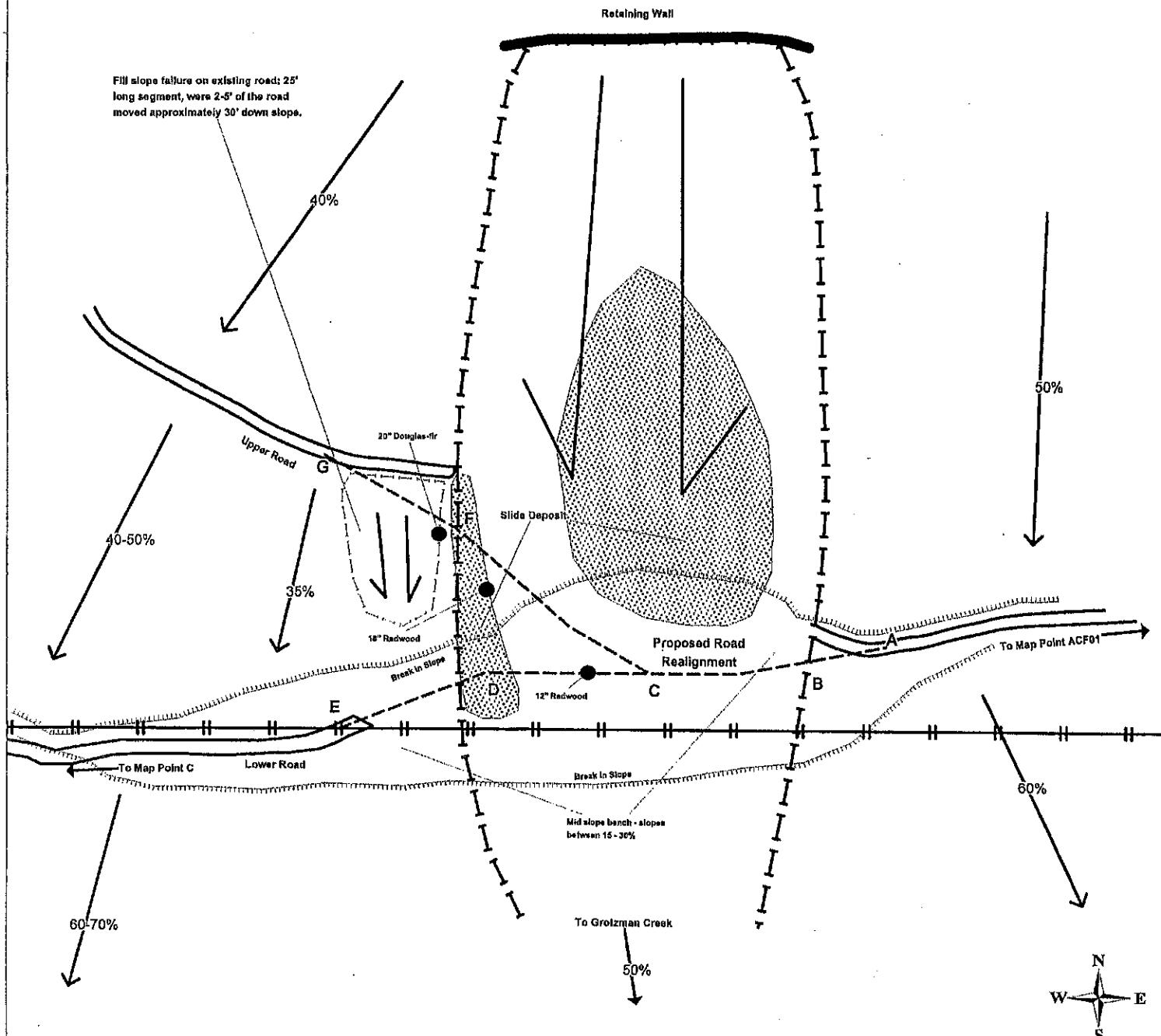
E

W

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Scale: 1" = 500'

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#### Lower Spur Road Specifications

- Begin new road alignment at point A
- Cut & fill construction between points A and B
- No fill shall be placed between points B and D; minimal grading shall occur along mostly intact road surface
- At point D, LTO shall cut through slide deposit, feathering fill onto road surface to the west
- Intercept existing road grade at point E

#### Upper Road Specifications

- Beginning from point C, the reconstructed road shall ramp up to the upper road to point F.
- The road shall cut through the lateral margin of the slide, as marked in the field, at a pitch that will minimize fill placement to the greatest extent feasible.
- Fill needed for the road bed shall be no greater than 5' deep. No imported material shall be used for fill within the margins of the landslide.

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## **SECTION III**

### **NON-OPERATIONAL ADDENDUMS**

## Project Description • 1034jj

The Schmidbauer THP is located approximately  $\frac{1}{4}$  mile northeast of the community of Sunny Brae, Arcata in the N  $\frac{1}{2}$  of Section 34, Township 6 North, Range 1 East, Humboldt County, HB&M. The THP area is located on the Arcata, South 7.5' USGS Quadrangle. The THP area contains un-named tributaries to Grotzman Creek.

### Geology and Soils

Geologic mapping by Kelly (1984) shows the THP area to be predominantly underlain by the Falor Formation. The Falor Formation consists of Early to Middle Pleistocene age fluvial and shallow water marine sediments, mainly sandstone, siltstone, and conglomerate (Kelly, DMG, 1984; SHN 2000). Exposures of the Falor Formation are visible on road cutbanks within the plan area. Melange of the Jurassic-Cretaceous age Franciscan Complex underlies the eastern portions of the THP. Melange generally consists of greywacke sandstone, siltstone, greenstone, shale, chert, and related rock types.

The Geology and Geomorphic Features Related to Landsliding, Arcata, South 7.5' Quadrangle, Humboldt County, California Scale 1:24,000 reveal no landslides in the THP area. However, review of the adjacent past plans reveals the presence of numerous landslide features within the vicinity. Unstable areas have been identified within the THP boundary and mitigations developed as part of the geologic review have been incorporated into the THP in Section II. See geologic report by SHN in Section V.

Soils within the THP are dominated by the Melbourne series (814). The Melbourne series have been described as loam/clay loam, and also have a parent material of sandstone and shale. These have been considered deep soils, 30-60 inches, with moderate permeability, good overall drainage, and have been rated as high to very high for timber productivity.

The THP area is geographically located on southwest and west facing slopes with elevations ranging from 440 feet to 850 feet. Slope steepness ranges from 0-70%, with an average slope steepness of approximately 40%.

### Vegetation and Stand Conditions

The THP area consists of second growth redwood and Douglas-fir with a minor component of Sitka spruce. The THP area was cruised in April 2005 using a variable plot cruise design of 2 plots per acre and a 40 BAF prism. Cruise figures are for all trees 12 inches DBH and greater. Total stand basal area is 316 ft<sup>2</sup> consisting of 87% redwood, 9% Douglas-fir, and 4% Sitka spruce. There are approximately 114 trees per acre. Diameter distribution ranges from 1-50 inches DBH with a QMD of 23 inches. The entire THP area contains downed woody debris and scattered snags. Understory vegetation is dominated by sword fern, evergreen huckleberry, red huckleberry, rhododendron, azalea, elderberry, black berry, and poison oak. The stand is approximately 50 years old resulting from harvesting in the 1960s.

### Watershed Conditions

The THP area is located within the Mad River Slough planning watershed. The Mad River Slough planning watershed is approximately 15,046 acres. The THP area drains to Grotzman Creek a tributary of Beith Creek. Beith Creek drains to Gannon Sough which is a tributary of Humboldt Bay.

The upper portions of the Grotzman drainage consist of Class II watercourses with moderately high gradient transport reaches and gravel-dominated channels containing moderate to large quantities of large woody debris. Within the numerous Class II pools moderately embedded gravel substrates were observed and moderate to high amounts of fine sediment was observed in the storage areas. Conditions observed were considered normal given the location of the watercourses within the watershed, the apparent amount of historic logging that occurred within the watershed, and the relatively steep channel gradients of the watercourses visited. Canopy cover along all the tributaries was high (80+%) consisting of redwood, Douglas-fir, Sitka spruce, big-leaf maple, pepperwood, alder, thimbleberry, ferns, and other riparian vegetation.

Grotzman Creek enters the Sunny Brae subdivision approximately 3,600 feet south west of the THP area. Once it enters the subdivision (via Beverly Drive) Grotzman is confined to various culverts and diversions that direct it around the urban areas before it resurfaces near Old Arcata Road and Samoa Boulevard. The channel is then directed southwest once it crosses Samoa Boulevard and drains into Beith Creek. Obviously impacted by the urban

## Project Description • 1034jj (Cont.)

developments of the city, the watercourse is not in its natural reach within the lower portions of the drainage. In these lower reaches it is likely that this stream is fish bearing even in its altered state. While no data exists, other streams in the vicinity are known to have resident coastal cutthroat trout populations. Fish surveys have occurred in Gannon Slough and lower portions of Beith Creek, and recently coho salmon were documented in Gannon Slough, along with numerous other estuary species.

The majority of the Mad River Slough is made up by the City of Arcata and the Arcata Bottoms. Several major watercourse are modified as they reach the urban portions of the city including Janes Creek and Jolly Giant Creek. To the east of Arcata lies the Arcata Bottoms which is an area intensely managed for grazing and dairy production. Most, if not all, watercourses have been affected by land practices in this area, including the draining of wetlands to establish grazing lands, the removal of vegetation along stream corridors, and grazing along and within stream channels.

## Range of Feasible Alternatives

As provided in the California Environmental Quality Act (CEQA), Title 14, CCR Sec 15126(d), the Alternatives Analysis must "describe a range of reasonable alternatives to the project, or to the location of the project which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.

This discussion of alternatives requires a definition of the basic objectives of the project. Discussion is limited to feasible alternatives that would avoid or substantially lessen any of the significant effects. The range of these alternatives is limited by the rule of reason in 14 CCR 15126(d)(5)(c),... project alternatives "whose implementation is remote and speculative" need not be given extensive consideration.

### Project description, purpose and need

The project is the Timber Harvesting Plan, (THP), as proposed. The basic objectives of the project are to access, harvest, and regenerate the forested area delineated in the THP. The project is to be carried out in accordance with the California Forest Practices Act and other applicable rules and regulations. Potential impacts are mitigated to insignificance by methods prescribed in the rules, by site-specific measures incorporated into the THP, and by the recommendations of the multi-agency, inter-disciplinary, review team process.

### No project alternative

A "no project" alternative would avoid the potential for environmental impacts associated with the project. However, elimination of the project would meet none of the basic objectives of the project, and, since the THP process mitigates environmental effects to a level of insignificance, a "no project" alternative would not necessarily result in significantly superior environmental results. Further numerous improvements designed to reduce net sediment levels with the watershed would not be implemented.

The "no project" alternative would reduce both the local employment base and revenues to the state and county generated by the yield tax. The "no project" alternative will not decrease the need for forest products, but could impact the supply. This could potentially be offset by shifting timber harvest to areas outside of the jurisdiction of the THP process where significant effects are not required to be mitigated. The elimination of the project is not a reasonable alternative to the project as proposed.

### Alternative land uses

This project, as proposed, is consistent with the historical management of the property. Currently, the majority of the property is being managed for timber production. The exception to this is the Out Area as mapped on the THP Map which represents the landowner's home site. The THP submitter does not know of any other feasible land use that would further reduce potential impacts while meeting the basic project objectives. This project will protect and enhance the public trust resources of the state through the application of the Forest Practices Act, other applicable rules and regulations and through the THP process.

## Range of Feasible Alternatives (Cont.)

### Timing of the project

The timing of the project is prescribed, to a certain degree, by the Forest Practices Act and other rules and regulations. These rules prescribe minimum stand ages for harvest, and, under certain conditions, proscribe harvesting adjacent to previously harvested areas for specified lengths of time.

Changing the timing of the project would not avoid or substantially lessen any potentially significant effects of the project, only defer those effects to another time. Therefore, changing the timing of the project is not a reasonable or necessary alternative.

### Alternative site

Similar to the timing alternative, the key question in the analysis of alternative sites is whether any of the potential impacts of the project would be avoided or substantially lessened by putting the project in another location. Since this project involves harvesting timber and leaving the area in a forested condition, it is substantially different from other types of projects that involve a permanent conversion to another land use. This project, as proposed, is site specific and is designed to address the specific conditions at a particular site, and to mitigate or eliminate potential impacts at that site. Relocating this project to an alternate site would not further reduce potential significant impacts to the environment. This project as proposed and mitigated will not have any significant effects on the environment. Therefore, proposing an alternative site is unnecessary.

### Public Acquisition or Conservation Easement

To date, no public agencies have approached the landowner to discuss acquisition nor is it known that the property is for sale. It is unclear how public acquisition or conservation easements would avoid or substantially lessen any of the potential impacts of the project and still meet the basic objectives of the project. The highest and best use of the project area is for timber production as proposed in the THP. This alternative is remote and speculative and is therefore rejected.

### Comparison of Project and Project Alternatives

- A. A "no project alternative" eliminates potential impacts associated with timber harvesting. However, "no project" is inconsistent with the purpose and need of the project. Additionally, a "no project" alternative could result in significant adverse impacts, both environmental and economic.
- B. An alternative land use such as the sale or conversion of the land is inconsistent with the objectives of this project area. This is also speculative and is not superior to the project as mitigated in the THP. If an alternative land use were implemented, significant adverse environmental impacts would likely result from alternate land uses that would possibly further fragment landscapes and lead to unregulated uses.
- C. Relocating the project or delaying the project to a later date may mitigate or avoid potential impacts in the project area until a point in time when the area will be harvested. However, not operating on this project would require operations to occur elsewhere on the property, and the same or similar impacts would occur there. Furthermore, any alternate location would likely be less suitable for management objectives in terms of achieving MSP than the project area.
- D. Conservation easement and public purchase may eliminate possible impacts associated with timber harvesting and would allow the timberland owner to realize a short term investment option. However, it is not feasible or likely and is remote and speculative that either would occur in the near or distant future.

## Addendum 13 – Responsibilities

### 1. 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:

- i. the plan,
- ii. the Forest Practice Rules, and
- iii. other associated regulations pertaining to timber operations.

d(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:

- i. 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;
  - ii. 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
  - iii. 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.
  - iv. 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 (5) 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. The plan submitter shall notify the Director prior to commencement of site preparation operations. Receipt of a burning permit is sufficient notice.
  - h. Disclose to the LTO, prior to the start of operations, through an on-the-ground meeting, the location and protection measures for any archaeological or historical sites requiring protection if the RPF has submitted written notification to the plan submitter that the plan submitter needs to provide the LTO with this information.

## Addendum 13 – Responsibilities (Cont.)

### 2. Timberland Owner's Responsibilities

The forest practice rules require that the Licensed Timber Operator, responsible for the implementation of the THP, be responsible for the proper construction, inspection, and maintenance of erosion controls during the prescribed maintenance period until the work completion report is approved by CDF (see rules below). Thereafter, the rules require that the Timberland Owner be responsible for inspection and any needed repair and maintenance of erosion controls within the THP area during the remainder of the prescribed maintenance period which lasts three years.

#### 923.4 Road Maintenance

Logging roads, landings, and associated drainage structures used in a timber operation shall be maintained in a manner which minimizes concentration of runoff, soil erosion, and slope instability and which prevents degradation of the quality and beneficial uses of water during timber operations and throughout the prescribed maintenance period. In addition those roads, which are used in connection with stocking activities, shall be maintained throughout their use even if this is beyond the prescribed maintenance period.

#### 1050 Erosion Control Maintenance

- a. Where necessary to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water, the department may require that erosion controls be maintained prior to the beginning of a winter period and prior to filing of a work completion report.
- b. The Director may deem completion report as described in PRC 4585 to have been filed upon the date of receipt if the department finds that all erosion controls have been constructed and maintained in compliance

with the Forest Practice Rules upon the first inspection after receipt of the completion report. Otherwise, the Director shall accept a work completion report for filing only after the department finds that all erosion controls have been constructed in compliance with the Forest Practice Rules.

- c. The LTO is responsible for proper construction, inspection and maintenance of erosion control during the prescribed maintenance period until the work completion report as described in PRC 4585 is approved by the Director. The landowner is responsible for inspection and any needed repair and maintenance of erosion controls during the remainder of the prescribed maintenance period. Responsibility for erosion control maintenance may be assumed at an earlier date by the landowner or can be delegated to a third party, provided that the assuming party acknowledges such responsibility in writing to the Director.
- d. Upon approving a work completion report, the Director may prescribe a maintenance period which extends for as much as three years after filing the work completion report based on physical evidence (such as location of erosion controls in disturbed areas with high or extreme erosion hazard, on steep or unstable slopes, or within or adjacent to the standard width of a water course or lake protection zone) that erosion controls need to be maintained for the extended maintenance period in order to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water.

Lastly, as authorized by the timberland owner the RPF or supervised designee shall be present on the logging area at a sufficient frequency to know the progress of operations and advise the LTO on a continuing basis throughout the active timber operation, but not less than once during the life of the plan; and

## Addendum 13 – Responsibilities (Cont.)

### 3. Timber Owner's Responsibilities

The Listed Timber Owner is responsible for the restocking of the THP area following operations and the filing of a stocking report as described below.

#### 1071 Minimum Stocking Standards

Within five years after the completion of timber operations or as otherwise specified in the rules, a report of stocking on the entire area logged under the plan and shown on a revised map shall be filed with the Director by the timber owner or the agent thereof. If stocking is required to be met upon completion of timber operations the stocking report shall be submitted within six months of the completion of operations. The minimum acceptable stocking standards on logged areas, which were acceptably stocked prior to harvest, are those specified in the Coast, Northern, and Southern Forest District rules. If not otherwise specified, the following minimum standards apply:

- a. On Site I timberlands as defined by the Board, the average residual basal area, measured in stems one inch or larger in diameter shall be at least 85 square feet per acre; or on Site II or lower shall be at least 50 sq. ft. per acre; or
- b. The area contains an average point count of 300 per acre on Site I, II, and III lands or 150 on Site IV and V lands as specified in PRC 4561. See 14 CCR 912.7, 932.7 and 952.7 for information for the point count values of various size trees and for determining how sprouts will be counted toward meeting stocking requirements.

#### 1075 Report of Stocking

A Report of Stocking on a form acceptable to the Director, certifying that the area logged does not meet or meets minimum stocking standards, shall be submitted by the timber owner or the agent thereof to the Director within five years after completion of timber operations, or as otherwise specified in the rules. The report shall contain the following information:

- a. Name, address, and telephone number of timber owner(s) or agent thereof.
- b. The plan number.
- c. Name of person performing the stocking sampling.
- d. Map showing the sampling area, by sampling procedure, if more than one procedure is used; the plot locations indicating status as stocked or non-stocked.
- e. The acreage of each sampling area.
- f. The number of plot centers installed by sampling procedure.
- g. The number of stocked plots by sampling procedure.
- h. Certification by the timber owner or agent thereof.
- i. Either the plot reference data specified in 14 CCR 1072.2 or direction as to where the plot reference can be obtained.

### 4. Licensed Timber Operator Responsibilities

Each affected Licensed Timber Operator shall:

- a. Sign the plan and major amendments to the plan, or sign and file with the Director a facsimile of such plan or amendments, agreeing to abide by the terms and specifications of the plan. This shall be accomplished prior to implementation of the following; which the affected LTO has responsibility for implementing:
  - i. those operations listed under the plan and
  - ii. those operations listed under any amendments proposing substantial deviations from the plan. Addendum 14 (a)– Maximum Sustained Production (MSP)
- b. Inform the responsible RPF or plan submitter, whether in writing or orally, of any site conditions which in the LTO's opinion prevent implementation of the approved plan including amendments.

## Addendum 13 – Responsibilities (Cont.)

- c. Be responsible for the work of his or her employees and familiarize all employees with the intent and details of the operational and protection measures of the plan and amendments that apply to their work.
- d. Keep a copy of the applicable approved plan and amendments available for reference at the site of active timber operations. The LTO is not required to possess any confidential addenda to the plan such as the Confidential Archaeological Addendum, nor is the LTO required to keep a copy of such confidential plan addenda at the site of active timber operations.
- e. Comply with all provisions of the Act, Board rules and regulations, the applicable approved plan and any approved amendments to the plan.
- f. In the event that the LTO executing the plan was not available to attend the on-site meeting to discuss archaeological site protection with the RPF or supervised designee familiar with on-site conditions pursuant to Section 929.2 [949.2, 969.2] (b), it shall be the responsibility of the LTO executing the plan to inquire with the plan submitter, timberland owner, or their authorized agent, RPF who wrote the plan, or the supervised designee familiar with on-site conditions, in order to determine if any mitigation measures or specific operating instructions are contained in the Confidential Archaeological Addendum or any other confidential addendum to the plan.
- g. Provide the RPF responsible for professional advice throughout the timber operations an on-site contact employee authorized by the LTO to receive RPF advice.
- h. Keep the RPF responsible for professional advice throughout the timber operations advised of the status of timber operation activity.
  - i. Within five days before, and not later than the day of the start-up of a timber operation, the LTO shall notify the RPF of the start of timber operations.
  - ii. Within five days before, and not later than the day of the shutdown of a timber operation, the LTO shall notify the RPF of the shutdown of timber operations.
  - iii. The notification of the shutdown of timber operations is not required if the period of the shutdown does not extend beyond a weekend, including a nationally designated legal holiday.
- i. Upon receipt of written notice of an RPF's decision to withdraw professional services from the plan, the LTO or on-site contact employee shall cease timber operations, except for emergencies and operations needed to protect water quality, until the LTO has received written notice from the plan submitter that another RPF has visited the plan site and accepts responsibility for providing advice regarding the plan as the RPF of record.

## Addendum 21b – Operations on Slopes > 65%

**Explanation:** This THP proposes tractor operations on slopes steeper than 65% as designated on THP map. Within areas designated as Cable-Longline areas (see THP Map) limited tractor operations are proposed on existing skid trails where slopes average 65% or greater. This proposed use is in exception to 14 CCR 914.2 (f)(i) which states that "heavy equipment shall be prohibited on slopes steeper than 65%."

**Justification:** There are two purposes for using these trails; to facilitate yarding and to access several mitigation sites as shown on the THP Map and addressed in Section II. Portions of the THP area have been classified as Cable-Longline areas. These are areas where slopes average 50% or greater. In such areas, the LTO may use designated trails as shown on the THP Maps and flagged in the field. All trails proposed for use are existing, and while in relatively good condition, will benefit from the placement of waterbars following operations. Beyond the installation of waterbreaks, Map Points 07 and 11 are active erosion sites that are proposed to be treated in this THP. The use of these trails will provide the opportunity to eliminate these on-going erosion sites while providing access to longline the timber to the trails.

**Mitigation:** See Section II – Item 21 on page 9.

## Addendum 24b – Proposed reconstruction of existing logging road surfaces in areas of unstable soils

**Explanation:** This THP proposes the use of existing seasonal truck roads located within an unstable area at Map Point B. Map Point B is comprised of two segments of road totaling approximately 340 feet. This proposed use is in exception to 14 CCR 914.2(d) which states that heavy equipment shall not operate on unstable areas.

**Justification:** These two road segments are required to facilitate hauling. Both of these road segments are existing roads from 1960s era harvesting. Because the road is the only haul road accesses to the west half of the THP, the use of this road is unavoidable. Just to the east of the unstable area the road forks, the northern segment accessing most of the western portion of the plan. The southern segment accesses the south western portion of the THP. Due to the location of the road geographically, no other feasible road grade is available to by pass the unstable area. This is true of both segments of road. The mitigations proposed in Section II were developed with recommendations from SHN's geologic review of the proposed practice. See the SHN's report in Section V of this THP.

**Mitigation:** See Section II – Item 24 on pages 11 and 12.

## Addendum 26 – 14CCR 916.4

14 CCR 916.4(a)(1): After evaluating areas near, and areas with the potential to directly impact, watercourses and lakes for sensitive conditions, the RPF has identified active/potential erosion sites that could potentially discharge sediment into nearby watercourses (includes appurtenant roads). These erosion sites are listed in Section II of the THP and further described in the Erosion Control Plan in Section IV.

## Addendum 26 – 14CCR 916.9.1

Mitigations proposed in this THP were developed in part through pre-consultation with Mark Moore of DFG on July 31, 2008. As such, DFG has determined that this THP, as proposed, will avoid take of coho salmon and no Incidental Take certification is needed.

14CCR 916.9.1 (a): The Mad River Slough Planning Watershed has documented occurrences of coho salmon within the past ten years. As such, timber operations within coho watersheds are required to "be planned and conducted to prevent deleterious interference with the watershed conditions that primarily limit the values set forth in 14 CCR 916.2(a)." To achieve this goal, this THP as proposed:

- a. shall not result in any measurable sediment load increase to a watershed system or lake. Through the mitigation measures set forth in Section II of this THP, timber operations as proposed are expected to result in a net savings of sediment in the watershed.
- b. shall not result in any measurable decrease in the stability of a watercourse channel or a watercourse or lake bank. Watercourse protection measures described in Section II in combination with the slope stabilization measures addressed in Item 18, Section II shall protect watercourse stability.
- c. shall not result in any measurable blockage of any aquatic migratory routes for coho salmon or listed species. There are no Class I crossings associated with this THP, nor do any Class I WLPZs occur within the THP area.
- d. shall not result in any measurable stream flow reductions during critical low water periods. No water drafting is proposed for this THP.
- e. shall not result in the loss of LWD or LWD recruitment. No Class I watercourses exist within the THP area and Class II WLPZ measures in Section II will provide for LWD recruitment.
- f. Shall not result in the reduction of canopy levels within a Class I watercourse. No Class I watercourses exist within the THP area and Class II WLPZ measures in Section II will retain canopy and maintaining temperatures from Class II recharge.

## Addendum 26 – 14CCR 916.9.1 (Cont.)

- g. shall result in no substantial increases in peak flows or large flood frequency. Silviculture proposed will not create any opening that will substantially alter to peak flows.

14CCR 916.9.1 (b): pre-plan adverse cumulative watershed effects on the populations and habitat of coho salmon were considered in the development of this THP. As stated above, coho salmon are documented in the planning watershed. While no Class I habitat occurs within the THP area, mitigations have been developed within the THP to prevent potential downstream adverse effects. See Section IV of this THP for a detailed description of the watershed and cumulative effects.

14CCR 916.9.1 (c) requires that protection, maintenance or restoration of the beneficial uses of water and habitat for anadromous salmonids or listed aquatic or riparian species be significant objectives. There are no fish bearing Class I watercourses associated with harvest units in this THP. The beneficial uses of water associated with the Class II watercourses located within this THP include, habitat for non-listed aquatic and riparian species, and water temperature regulation for downstream fisheries habitat. Those beneficial uses of water for all the THP's watercourses will be protected by the watercourse protection measures provided in Section II - Item 26 that include standard WLPZ widths and canopy retention measures, which are in accordance with the requirements of 14CCR 916.4. The plan as proposed shall meet the intent of 916.9.1(c). This conclusion is based upon present watercourse conditions, downstream watershed conditions, pre-harvest canopy cover, expected post-harvest canopy cover, and the limited amount of activity that will occur within these zones during the life of the THP. Furthermore the treatment of active erosion sites within the THP area will lead to a new sediment savings in the watershed.

14CCR 916.9.1 (d)(1) requires that "The plan shall fully describe: (A) the type and location of each measure needed to fully offset sediment loading, thermal loading, and potential significant adverse watershed effects from the proposed timber operations, and (B) the person(s) responsible for the implementation of each measure, if other than the timber operator. Because of the silviculture, WLPZ protections, and road drainage improvements, no significant sediment loading, thermal loading, or significant adverse watershed effects are expected. All operational measures stated in Section II of the THP shall be implemented by the LTO. Maintenance of erosion control structures and facilities following the completion of operations shall be assumed by the timberland owner.

14CCR 916.9.1 (h)(2&3): There are no proposed or existing Class I watercourse crossings associated with this THP.

14CCR 916.9.1 (o) The THP has identified active erosion sites per 916.9.1(o). These sites are associated with road points detailed in Section II – Item 21 & 24 and are targeted for remediation prior to the completion of operations. These remediation measures will reduce the chance of a significant risk to the beneficial uses of water to less than significant. Other mitigations that shall occur within the THP area are associated with the proper placement of waterbars where they currently don't exist and general road use specifications associated with stable operating surfaces. Collectively, all road points, general road use mitigation and the proper placement of waterbars are expected to create an overall sediment savings within the THP area and watershed.

## Addendum 26 – 1611 Notification

### Notification Information List Pursuant to Fish and Game Code Section 1611

THP#

THP Name: Schmidbauer THP

**IMPORTANT:** In order to facilitate processing of Streambed Alteration Notifications via Fish and Game Code (FGC) Section 1611, the Department of Fish and Game (Department) recommends all information requested below be attached in Section III, Addendum to Item 26 of Timber Harvesting Plans (THPs). In accordance with FGC Section 1611, the Department is not required to process the notification until the THP and the notification fee have been received by the Department. Please send the notification fee directly to the appropriate Department regional office. Note: The notification fee must be paid no later than the date the California Department of Forestry and Fire Protection (CDP) accepts the timber harvesting plan for filing, to allow the notification processing pursuant to FGC Section 1611 to run concurrently with the THP review process.

Please provide the following information for notification of Lake or Streambed Alteration Activities in accordance with the "Guidelines for Lake or Streambed Alteration Notification via Timber Harvesting Plans".

Basic data, including all the following:

Applicant: **George Schmidbauer**  
P.O. Box 143  
Eureka, CA 95501  
707-443-7024

Operator: **Redwood Forest Products, Inc**  
John Lima, LTO# A-190  
P.O. Box 1146  
Arcata, CA 95518  
707-826-2794

Contractor: **N/A**

Contact Person: **John Lima**  
P.O. Box 1146  
Arcata, CA 95518  
707-826-2794

Property Owner: **George Schmidbauer**  
P.O. Box 143  
Eureka, CA 95501  
707-443-7024

**City of Arcata**  
737 F Street  
Arcata, CA 95518  
707-822-5951

The name of each lake and the name and watercourse classification of each stream the lake or streambed alteration activities will affect, including the nearest downstream watercourse or water body.

**Unnamed Class I, II & III watercourses tributary to Grotzman Creek**

## Addendum 26 – 1611 Notification (Cont.)

The township, range and section numbers and the latitude and longitude of each lake and stream encroachment.

### Section 34, Township 6 North, Range 1 East

Map Point 01: 40.515939° N, 124.030506° W

Map Point 06: 40.515389° N, 124.032094° W

Map Point 07: 40.515549° N, 124.032396° W

Map Point 09: 40.515919° N, 124.032283° W

Map Point 11: 40.515839° N, 124.032543° W

ACF01: 40.515180° N, 124.031333° W

ACF03: 40.515056° N, 124.030878° W

A map or diagram of all lake and stream encroachments, with road names and encroachments both identified on the same map or diagram, and the encroachments numbered or otherwise labeled and classified by watercourse type (i.e., Class I, II, or III). The map should clearly indicate the stream or other water body and access from a named public road and include a north arrow.

**See attached map.**

A description of the types of lake or stream encroachments the applicant intends to construct, install, use or remove (e.g., a corrugated metal culvert, "Humboldt" crossing, impoundment for water diversion, water drafting sites, bank stabilization, rocked ford, bridge, etc.), and whether they will be temporary or permanent. If multiple lake or stream encroachments are proposed, the applicant should include a table that describes each type of encroachment (e.g., permanent culvert, temporary bridge, rock revetment, etc.), watercourse classification, culvert size and encroachment map reference number.

Map Point # (Location shown THP Map)	Stream Classification	Approximate volume of Road fill to be Removed and Placed	Water Diversion Impoundment	Equipment to be Used
Map Point 01	I DWS	<5 cu yds	N/A	Backhoe/Tractor/Excavator
Map Point 06	III	<1 cu yds	N/A	Backhoe/Tractor/Excavator
Map Point 07	III	<5 cu yds	N/A	Backhoe/Tractor/Excavator
Map Point 09	III	<10 cu yds	N/A	Backhoe/Tractor/Excavator
Map Point 11	III	<6 cu yds	N/A	Backhoe/Tractor/Excavator
ACF01	II	<6 cu yds	N/A	Backhoe/Tractor/Excavator
ACF03	II	n/a	N/A	Backhoe/Tractor/Excavator

A description of the fish and wildlife and botanical resources the work could adversely affect, including riparian resources and special status species (i.e., species listed under the California Endangered Species Act ("CESA") and/or the federal Endangered Species Act ("ESA"), species fully protected under state law, and/or species of special concern). If the work could adversely affect any listed species, the applicant should indicate whether consultation under CESA or ESA has commenced and if so, the current status of the consultation. Applicant should also provide the biological opinion, as applicable. In addition, please indicate if the work takes place in, adjacent to, or near a river that has been designated as "wild and scenic" under state or federal law.

**A detailed description of listed and non-listed species is included in Section III, Addendum 32(a) &(b) of the THP. The work at all Map Points will take place on unnamed Class I, II and III tributaries to Grotzman Creek. The Class I DWS (Domestic Water Source) is not a fish bearing stream.**

## Addendum 26 – 1611 Notification (Cont.)

Information about each lake and stream encroachment, including the following: Construction plans, including specific details, cross sections, and dimensions.

- Map Point 1:** Temporary Class I crossing on existing seasonal truck road. A fill crossing exists at this location now. The head of a Class II spring is located just above the crossing. The temporary culvert shall be a minimum of 6 inches and shall be long enough that backfill cannot reach the inlet or outlet of the pipe. Additionally, the LTO shall place 2-3 hay bales in the channel below the outlet of the culvert to act as a siltation control measure. The LTO shall monitor this site periodically and replace the bales when needed. The LTO shall remove crossing in accordance with "Watercourse Crossing Removal" specifications below following the completion of hauling on this segment of road or prior to the start of the Winter period, which ever occurs first. Following the removal of the crossing, the LTO shall install Drain Rock in-line with the channel from the head of the crossing down to the break in slope below the crossing. This measure is proposed to address potential down cutting.
- Map Point 6:** Temporary Class III crossing on existing skid trail. The LTO shall maintain the existing channel configuration by placing hay bales and/or compacted slash into the channel prior to use. Fill may be backfilled over this material. Prior to the start of the Winter Period the LTO shall remove all material from the channel. Additionally, the LTO shall take care to minimize excavation of the toe of the cutbank on the west approach of the crossing to the greatest extent feasible (area between Points 6 and 7).
- Map Point 7:** Temporary Class III crossing on existing skid trail. This watercourse has been diverted by the trail and has created a gully for approximately 150 feet to where it blows out at a fill slope failure. Prior to the Winter Period the LTO shall dip out the crossing to eliminate any future diversion potential. The fill slope of the trail shall be dug down in-line with the channel and lined with rock. Additionally, three large waterbars shall be installed between the crossing and the blow out to break up the drainage of the trail.
- Map Point 9:** Class III crossing on existing seasonal truck road. Large amounts of dirt have been piled in this location, likely moved from the old log landing to the west and from an old skid trail that once switched back in the channel of the Class III (immediately below the truck road crossing). Currently the channel has settled into the western side of the material before crossing the road, at which point it has down cut into the fill material of the road and old skid trail creating large gullies that lead into the channel. It is not feasible to restore the channel to its original position mainly due to the immense amount of excavation required to do so. It appears that most of the unstable fill has eroded away and the down cutting has slowed in recent years.  
Prior to the start of the winter period, the LTO shall rock the entire basin (of the road prism), filling in the gully with rock to establish the inboard running surface. Beginning 10' to the west of the channel and continuing 50' to the east of the channel. This practice will minimize disturbance and armor the road prism from future erosion.
- Map Point 11:** Temporary Class III crossing on existing skid trail. A Humboldt crossing is currently installed at this location. Prior to the completion of operations the LTO shall remove this crossing in accordance with the "Watercourse Crossing Removal Specification" below. Following removal, the approaches to the crossing shall be treated with packed slash.

The following Map Points occur on the Arcata Community Forest:

- ACF01:** Temporary Class II crossing on existing seasonal truck road. A temporary culvert of no less than 18" in diameter shall be used for the crossing. Prior to the start of the Winter Period, a Rock Ford shall be installed at this location in accordance with the "Rock Ford Specifications" stated under Item 26.

## Addendum 26 – 1611 Notification (Cont.)

ACF03:

Temporary Class II crossing on existing seasonal truck road. It appears as if a Humboldt crossing was once located here though most of the material has since washed out from the crossing. The banks appear to have stabilized though portions of the old road prism can be seen on the southern approach. It is proposed to cross this watercourse with a minimum 54 foot rail car temporary bridge. The northern approach shall be realigned to the west of the crossing following portions of an existing skid road grade as flagged in the field.

Abutment locations have been flagged in the field. Beginning approximately 30 feet back from the northern abutment location, the LTO shall lay back the slope to achieve a favorable road grade leading to the bridge. This will require the slope to be cut down approximately 4-6 feet in depth. This shall be achieved with an excavator on the break in slope above the crossing and the material shall be placed upslope of the creek's floodplain on the existing terrace where spoils have been traditionally stockpiled (Map Point ACF02). During reconstruction, no fill material shall be placed, pushed or side-casted into the direction of, or into the watercourse.

The northern abutment shall be compacted dirt, utilizing the existing bench as flagged in the field. A few logs shall be placed below the abutment to prevent it from sinking. The southern abutment shall be constructed of logs built up from the existing bench as flagged in the field.

The bridge is designed to remain installed for the life of the THP. At the completion of operations the abutments shall be removed and the approaches stabilized as per item 18. The through-cut portion of the newly aligned northern approach shall be treated with compacted slash, with a waterbar at the break in slope directing drainage away from the approach.

Alternatively, the bridge may be installed as a permanent crossing. If the permanent crossing alternative is chosen, the north and south abutments shall be constructed of concrete blocks in the same relative positions the temporary abutments are proposed. Additionally, the treatment for the through-cut portion of the northern approach shall be rock instead of packed slash. If this option is chosen, it shall be reflected in the approved 1611 with DFG.

### Soil Stabilization Measures:

The treatment for other disturbed areas within the WLPZ, and within any ELZ or EEZ designated for watercourse or lake protection, including: (A) areas exceeding 100 contiguous square feet where timber operations have exposed bare soil, (B) approaches to tractor road watercourse crossings between the drainage facilities closest to the crossing, (C) road cut banks and fills, and (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, shall be grass seeded and mulched with straw or fine logging slash. Grass seed (barley seed) shall be applied at a rate exceeding 100 pounds per acre. Straw mulch shall be applied in amounts sufficient to provide at least 2"- 4" depth of straw with minimum 90% coverage. Logging slash may be substituted for straw mulch provided the depth, texture, and ground contact are equivalent to at least 2"- 4" straw mulch.

### Watercourse Crossing Removal:

1. Fills shall be excavated to form a channel that is as close as feasible to the natural watercourse grade and orientation and is wider than the natural channel.
2. The excavated material and any resulting cut bank shall be sloped back from the channel and stabilized to prevent slumping and to minimize soil erosion as described in Section II, Item 18. Channel side slopes shall not exceed 2:1, unless adjacent natural slopes are steeper.
3. All bare mineral soil located on approaches to truck and tractor road watercourse crossings up the edge of the WLPZ or the nearest drainage facility, whichever is farthest, shall be treated per Section II, Item 18.

## Addendum 26 – 1611 Notification (Cont.)

### **Rock Ford Specifications:**

1. The truck road shall dip into and out of the rock ford to minimize diversion potential.
2. The crossing shall be constructed with clean, native rock that is large enough to remain in place during peak flows. Rock size shall vary relative to the size of the watercourse.
3. The crossing's inlet and outlet shall be rock armored to resist downcutting and erosion.
4. The entire width of the crossing's approaches shall be rock armored to a minimum of 6-feet from the watercourse transition line at either side of the crossing.
5. If the crossing is expected to carry water any time during the course of operations a minimum 6-inch temporary pipe shall be installed. Following operations, the temporary culvert and any non-rock fill shall be removed and the rock ford shall be constructed as described above.

If water will be present and diversion of flow around the work site is necessary, the volume of water to be diverted and the method of diversion. If water drafting is proposed, provide drafting site information (e.g. estimated volume, drafting rate, timing, etc.) Please indicate if the activity will be done pursuant to a water right application or permit.

Water is expected to be present at Map Point 1 and ACF01. Prior to the construction within the wetted channel, all surface flow present shall be cleanly diverted around the work area by gravity flow pipe or pumping and returned to the stream below the work site. The flow shall be diverted only when the construction of the diversion is completed. Any temporary artificial obstruction shall be built from material which will cause little or no siltation (i.e., sandbags, straw bales, rock or plastic).

The materials (e.g., soil, sand, gravel, ¼- to ½-ton rip-rap, large wood, etc.) and volumes that will be used for and/or removed from the lake or stream encroachment, the dimensions of the area to be excavated and the dimensions of the area to be filled.

### **See Description above.**

The type of equipment to be used, specifying any unusual equipment needs.

**An excavator, dump truck, tractor and grader may all be employed.**

Proposed work periods including the date or conditions requiring temporary crossing removal.

**It is expected that work will generally occur between May 1 and October 15 of any year of operations.**

The species composition and density of vegetation to be removed or disturbed as a result of lake or streambed alteration activities. Please indicate if sensitive plant surveys have been completed within areas which will be affected by lake or stream encroachments.

**Surveys for sensitive plant species have been conducted. See botanical survey report in Section V.**

Mode of impact to fish, wildlife and botanical resources (e.g., changes in sediment and/or flow delivery rates, dewatered or impounded watercourses, destabilized stream banks, erosion causing sediment deposition, changes to or elimination of riparian vegetation, reduced canopy affects on microclimate and/or water temperature, etc.)

**There is the potential for minor amounts of sediment to reach the watercourse during excavation and placement of temporary culverts, and during the first winter following operations. This potential will be minimized by operating during low flow periods and by the soil stabilization measures required by the THP. The removal of the old Humboldt crossings are expected to reduce sediment yields in the long-term.**

## Addendum 26 – 1611 Notification (Cont.)

Measures included to protect fish, wildlife and botanical resources (e.g., avoidance measures, sediment control measures; construction time periods; methods to divert water around or away from the work site; special measures necessary to protect special-status species; a post-work action plan including measures to minimize soil erosion; etc.).

**Mitigations associated with this permit will ensure that no significant impacts will occur to fish and wildlife species. The Forest Practice Rules and other THP mitigations have mitigated for other potential impacts. In regards to botanical resources, default avoidance mitigation measures, as described in the Section II, Item 32, will be applied to any listed plant until site-specific protections measures are developed.**

Calculations or data used to size culverts.

N/A

For bridge installations: indicate if the abutments or road approaches will encroach into the floodplain or channel; provide the calculations or data used to determine bridge height and flow capacity; describe the type of abutments and scour protections with dimensions; provide any engineering reports or plans; etc.

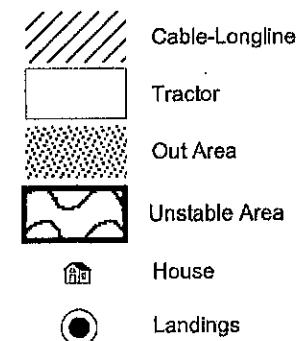
**See description for Map Point ACF03 above and attached diagram.**

# Schmidbauer THP

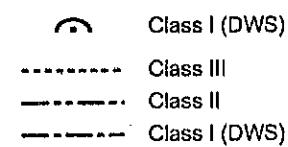
## 1600 Notification Map

Located in Section 34,  
T6N, R1E, HB&M; Humboldt  
County, digitized from the  
Arcata South USGS 7.5' Quad  
Contour Interval = 40'

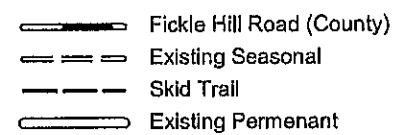
### Yarding Method



### Watercourses



### Roads

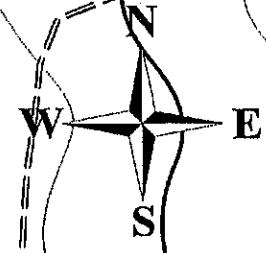


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RESOURCE MANAGEMENT

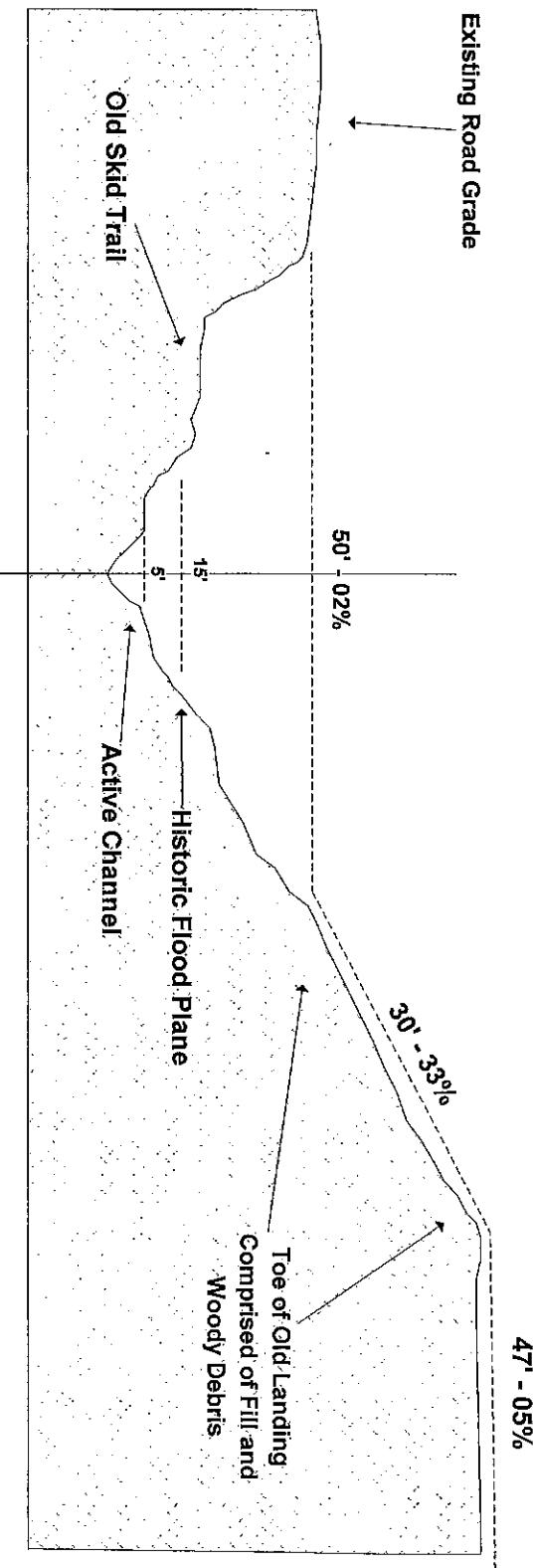


Scale: 1"=300'

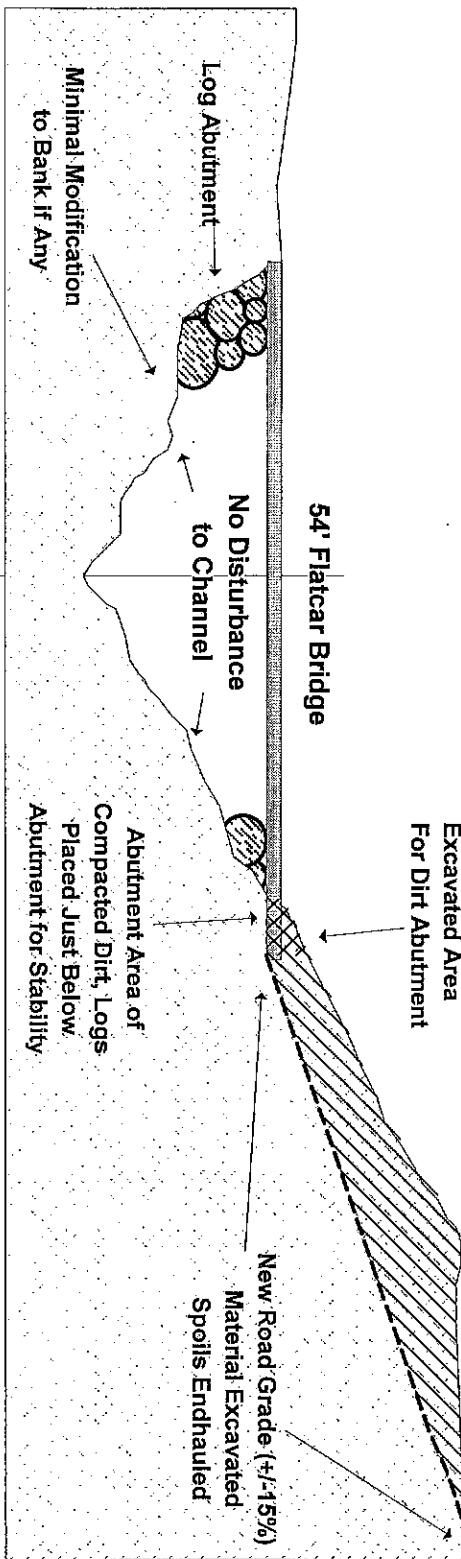
# Schmidbauer THP - Map Point ACF03

## Bridge Schematic

### Existing Configuration



### Post Installation



## Addendum 27(a) – Timber Operations within a Class II WLPZ

### Map Point A

**Explanation:** At Map Point A an existing skid trail is proposed for use along the margins of a Class II WLPZ. As such, this THP proposes practices that constitute use of skid trails within a WLPZ. 14CCR 916.3(c) states that "the timber operator shall not construct or reconstruct roads, construct or use tractor roads or landings in Class I, II, III or IV watercourses, in the WLPZ, marshes, wet meadows, and other wet areas unless when explained and justified in the THP by the RPF"

**Justification:** The use of this skid trail will allow access for timber operations. The existing trail occurs on the outer edge of the WLPZ. The trail can be drained adequately as to not contribute sediment to the nearby watercourse. Additionally, the re-use of this existing trail will allow the LTO to install new drainage facilities that have worn down since the previous entry. A new trail could be constructed near these areas where the existing trail occur, however this would create unwanted soil disturbance, add to the road density, and reduce the available growing space.

**Mitigation:** See Section II – Item 27 on page 18.

### Map Point ACF02

**Explanation:** At Map Point ACF02 a landing is proposed for reconstruction within a Class II WLPZ. As such, this THP proposes practices at locations that constitute use of a landing within a WLPZ. 14CCR 916.3(c) states that "the timber operator shall not construct or reconstruct roads, construct or use tractor roads or landings in Class I, II, III or IV watercourses, in the WLPZ, marshes, wet meadows, and other wet areas unless when explained and justified in the THP by the RPF"

**Justification:** The use of this landing is limited to being used for a staging area to facilitate the construction of the road points at ACF01 and ACF03. No log landing is proposed at this location. This landing shall be used to the minimum extent feasible to facilitate the proposed operations. Due to the location of the road in relation to the topography of the surrounding areas; no other feasible location exists where staging can occur. To construct a new landing would require substantial excavation and create unwanted soil disturbance, likely on steep slopes. This location has been used as a landing historically, and is the logical alternative for staging road work in the vicinity. Mitigations proposed in Section II if the THP will sufficiently protect the beneficial uses of water.

**Mitigation:** See Section II – Item 24 on pages 14 -15.

## Addendum 28 – Domestic Water Sources

Three areas of concern have been identified and are addressed in Section II of the THP. The following background information is included for ease of review.

1. A Class I DWS spring is located in the northeast portion of the plan below Map Point 1. This watercourse has several domestic water intakes and supplies water to several adjacent residences, including the Schmidbauer residence in the center of the THP area. This watercourse is not within the THP area and therefore no timber harvesting is proposed within the WLPZ. The waterline is buried immediately to the east of the skid trail (Map Point E). It does not follow the entire trail segment, however the LTO has been instructed in this THP to generally avoid the waterline and repair it immediately if damaged. The watercourse crossing at Map Point 1 is a low gradient watercourse and considering the current channel configuration a temporary crossing was deemed appropriate. As an added precaution, mitigation has been applied to the outlet of the temporary pipe to prevent potential sedimentation from reaching the water intakes. As described in Section II, hay bales are proposed to be laid in the channel below the outlet of the temporary pipe to act as a "check dam" for potential sediment. In this way, if sediment does build up behind these bales it can be safely removed when the crossing is pulled. Down cutting following the removal of the crossing was also considered. This was addressed by the installation of Drain Rock in-line with the channel. This practice is expected to armor the channel and break up energy during winter flows. Additionally, a provision was added that following the need to use the road (once operations on the north eastern plan area are complete) the crossing will be pulled. This shall happen at this time or prior to the Winter Period, whichever happens first.

## Addendum 28 – Domestic Water Sources (Cont.)

2. A well is located on the north-eastern side of the landing at Map Point F. This existing landing is large enough that the entire landing will not be needed to facilitate the logging within the vicinity. The well is capped, and deep enough, that surface run off is not an issue. As stated in Section II, the LTO shall observe the ELZ near the well and avoid it.
3. A spring fed domestic water source is located just below the appurtenant haul road at Map Point G. This road occurs on the Morris property and no timber harvesting is occurring near the spring. Only seasonal hauling will occur on this road. An active THP (1-06-164H) recently treated this portion of road with rock and outsloped the road. Under this THP, the LTO will be required to maintain the existing configuration of the road grade. This practice will eliminate the potential for road runoff to concentrate and deliver into the nearby spring.

Two other domestic watercourses are known to exist at the eastern extent of the appurtenant haul road. The road at this location is paved however, and no impacts are expected as result of hauling over the paved road.

Three letters were received following the notification of down stream landowners and are included in Section V. These landowners live on Del Mar Vista Lane which occurs to the west of the proposed THP. Two of the letters, (Turner and Isaac) identified a surface well within 1000 feet of the THP. This surface well occurs on the Turners' property and is the sole domestic water source for the Isaac property. This well is situated in the head of a Class II spring located approximately 50 feet to the west of the THP. Approximately 0.3 acres of the THP drain surface flow into the watershed above the well. No watercourses from the THP area drain into the watershed containing the well. While it was unclear were previous harvesting occurred that effected the well in the past, during field assessment it noted that drainage from Del Mar Vista Road enters the watercourse via approximately 150 feet of inside ditch. PG&E power lines are located immediately to the east of the spring, and the watercourse above it is day-lighted. Drainage from Fickle Hill Road may also be a factor effecting hydrology in this area. This THP is not expected to have any significant impact on this water source. This conclusion is based on the small area of THP that could reasonably affect the well, the lack of watercourses draining from the THP area into the spring, and the selective silviculture proposed.

The third letter was received from Mr. Frisk who indicated an additional surface fed water source down stream of the proposed THP. This DWS is located in a Class II watercourse approximately 500 southwest of the THP area. The spring originates on the Turner property (location of the Isaacs' well). Two Class III watercourses drain from the THP area into the watercourse – below the Isaacs' well and above Mr. Frisks' intake. The RPFs designee met with Mr. Frisk on 7-28-2008 and the location of the intake was noted. This THP is not expected to have any significant impact on this water source. The treatments proposed at Map Points 9, 10, & 11 are expected to reduce long-term sediment yields in the watershed. The selective nature of the harvest will further prevent any significant effects to peak flow downstream.

## Addendum 32(a) - Rare and Endangered Species

### A. BIOLOGICAL ASSESSMENT METHODOLOGY

#### Rare Plants and Animals

The scoping procedure used relative to the listed plants and listed animals, noted in this Addendum is as follows: First the Natural Diversity Database was queried (January 2008) for a distance of 5 miles surrounding the THP area and all species were noted. Next, a general habitat assessment was made for the stand, and nearby unique habitats within the BAA (i.e. rock outcroppings, late seral forest stands, rivers, lakes, woodlands, unique soil types such as serpentine, etc) were noted based upon aerial photo interpretation, familiarity with the area, and consultation with nearby approved THP's. The BAA for this THP is defined as a 1.3-mile radius surrounding the THP boundary. This BAA was chosen because it represents a geographic area of sufficient size to properly consider the potential impacts of timber harvesting on potentially affected, listed species. Lastly, given the habitat types present within the THP and BAA, a species list was developed for animals and plants using the following California Department of Fish and Game information sources: Endangered and Threatened Animals List (February 2008), Special Animals List (February 2008), Endangered, Threatened and Rare Plants List (January 2008), and lastly Special Plants List (January 2008). The above lists were obtained from [http://www.dfg.ca.gov/biogeodata/cnddb/plants\\_and\\_animals.asp](http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp)

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## Addendum 32(a) - Rare and Endangered Species (Cont.)

### Fish and Amphibians

The RPF visited all watercourses within the THP area to determine watercourse classification and to make observations of fish, aquatic vertebrates and watercourse conditions. The visits occurred from October 2007 through August 2008. Watercourse classification, channel morphology, riparian vegetation, and upslope conditions (including canopy cover and upper bank stability) were assessed to determine habitat suitability and overall watershed condition.

### Raptors

Pre-field scoping for listed and non-listed raptors was done as follows: First a general habitat assessment was made for the stands and nearby unique habitats within the BAA was noted based upon aerial photo interpretation, familiarity with the area, and consultation with nearby approved projects. Next, the Natural Diversity Database (January 2008) was queried for a distance of 5 miles surrounding the THP area and all species were noted. Previous THP and THP wildlife survey information was reviewed for any potential information leading to local historical sites of raptors and their habitats. With this information, the area of survey effort was assessed in the field for unique habitats and structural assessment of habitat was conducted by direct observation. Finally, given the habitat types present within the THP and the survey area, the RPF developed a species list using the previously mentioned California Department of Fish and Game information sources.

The entire THP area was considered potential suitable habitat to a number of nesting raptors. The survey strategy consisted of a stand search conducted for other raptor species. The stand search consisted of traversing the THP area and specifically looking for nesting structures in the conifers for the diurnal raptors that nest below the canopy, and looking for nesting structures in the scattered residual conifers/snags for the diurnal raptors that nest above the canopy. The RPF and his designee conducted the stand searches. The following species were surveyed for using the stand search method in their respective habitats:

- A. Diurnal raptors that nest above the canopy: Osprey, bald eagle, red-tailed hawk
- B. Diurnal raptors that nest below the canopy: Sharp-shinned hawk, Cooper's hawk, turkey vulture, golden eagle
- C. Diurnal raptors that nest in open or edge habitats: Golden eagle, red-shouldered hawk, American kestrel

No raptors or raptor nests have been observed during raptor surveys. An additional survey has been occurring at the time of this writing, and consists of an additional stand search during timber marking. No raptor nests, or signs of white wash, plucking posts, fish bones, etc have been observed to date. Stand searches shall continue to occur concurrent with timber marking activities. The final check for nesting raptors shall be made by the timber fallers as described in Item 32 on page 21.

### B. LISTED RARE AND ENDANGERED SPECIES WHOSE HABITAT AND RANGE OVERLAPS THE THP AND BAA

#### 1. Peregrine Falcon (Falco peregrinus)

**Status:** State Endangered, Board of Forestry Sensitive Species (BOF), Federally de-listed August 25, 1999.

**Key Habitat:** Breeds near wetlands, lakes, riparian areas, or other water, mostly on high cliffs, ledges and rock outcroppings in woodland, forest, and coastal habitats. There has been recent documentation of peregrine falcon nests in old growth redwood snags.

**Status within Plan Area and BAA:** High cliffs, ledges and rock outcroppings do not occur within the plan area. Redwood snags occur within the BAA and THP. The RPF has investigated the majority of snags and large wildlife trees for the presence of any wildlife species that may be utilizing them for nesting, roosting, or perching. No nest trees or perch trees with signs of nests or whitewash were observed during plan preparation.

**Mitigations:** Given the location of this THP and the lack of traditional suitable peregrine falcon habitat (i.e. rock outcroppings and rock ledges), operations conducted under this THP should not significantly impact peregrine falcons or their habitat.

## Addendum 32(a) - Rare and Endangered Species (Cont.)

### 2. Bald Eagle (*Haliaeetus leucocephalus*)

**Status:** State Endangered, BOF Sensitive Species and Federal Threatened while Federally Proposed for de-listing July 6<sup>th</sup>, 1999.

**Key Habitat:** Requires large bodies of water or free flowing rivers with abundant fish populations, with adjacent snags or other perches.

**Status within Plan Area and BAA:** No bald eagles are known to historically occur within the BAA. Habitat is lacking in the THP area due to the distance to the nearest body of water.

**Mitigations:** None.

### 3. Northern Spotted Owl (*Strix occidentalis caurina*)

**Status:** BOF Sensitive Species and Federally Threatened

**Key Habitat:** Requires mature forest patches with permanent water and suitable nesting trees and snags.

**Status within Plan Area and BAA:** No NSOs are known to historically exist within the THP area. According to the NSO Database, two territories are known within the BAA. These territories are identified as HUM0228 and HUM0586. HUM0228 has been determined to be an unoccupied site (ref. 99NTMP-014H and 8-14-2007-TA-3182). Based on the data in the NSO database this appears consistent; one unidentified response in 1990, another unidentified response in 1992, and an unidentified male in 2004. This data suggests a foraging NSO rather than a territory. HU0586 has been recorded on surveys since 1992 and was last recorded in 2005. While no nest has been found (according to the Database) an accepted activity center is recognized. See section V for NSO habitat maps and habitat assessment.

**Mitigations:** HU0586 is located approximately 5,600 feet from the THP area, on the other side of the Fickle Hill ridge. Due to the distance to the nearest known activity center, no disturbance impacts are expected. The THP will not result in a net loss of suitable NSO habitat. It is unlikely that future THP projects will reduce habitat levels below acceptable thresholds. This conclusion is based on the fact that of the forested portions of the BAA, approximately 60% of the BAA is tied up in approved NTMPs (99NTMP-014, 99NTMP-033, and 02NTMP-013). Due to the selective nature of these NTMPs, habitat levels are expected to stay consistent within the BAA over at least the next ten years. Protocol surveys have been conducted in the 2008 survey season. Awaiting technical assistance from the USFWS.

### 4. Marbled Murrelet (*Brachyramphus marmoratus*)

**Status:** State Endangered, BOF Sensitive Species and Federally Threatened

**Key Habitat:** Forages in marine environments only. Apparently partial to coastlines with stands of mature redwood or dense mature conifer forests for nesting.

**Status within Plan Area and BAA:** No nesting habitat is known to exist within the THP or BAA. Potential habitat for marbled murrelet may occur within the Arcata Community Forest in the western portion of the BAA; however this is greater than 1/4 mile from the THP area.

**Mitigations:** Due to the lack of habitat within the THP, operations conducted under this THP should not significantly impact marbled murrelets or their habitat.

### 5. Coho Salmon (*Oncorhynchus kisutch*)

**Status:** Federally Threatened and State Candidate

**Key Habitat:** Coho salmon utilize a variety of freshwater habitats and tolerances and requirements change with season and age. Each of the four distinct life stages, Adult, Spawning/embryo/alevin, Parr, and Smolt, require specific habitat quality.

## Addendum 32(a) - Rare and Endangered Species (Cont.)

**Status within Plan Area and BAA:** No Class I fish habitat occurs within the THP area. Coho have been documented in Gannon Slough approximately 1.5 miles southwest of the THP area. While no occurrences have been documented in Grotzman Creek, habitat potentially exists within its lower reaches.

**Mitigations:** Watercourse protection measures contained in the THP will protect Class II and III watercourses. Remediation of active and potential erosion sites along the appurtenant road system will lower sediment yields entering the planning watershed.

### 6. Steelhead Trout (Oncorhynchus mykiss)

**Status:** Federally Threatened

**Key Habitat:** Migrating fish requires deep holding pools with cover. Spawn in cool, clear, and well-oxygenated streams. Preferred temperatures are 10-15 degrees C. Juveniles migrate out to sea in 1 to 3 years.

**Status within Plan Area and BAA:** No Class I fish habitat occurs within the THP area. No steelhead have been recorded in the BAA, though young-of-the-year trout have been documented in Gannon Slough just outside the BAA. While no occurrences have been documented in Grotzman Creek, habitat potentially exists within its lower reaches.

**Mitigations:** Watercourse protection measures contained in the THP will protect Class II habitat. Remediation of active and potential erosion sites along the appurtenant road system will lower sediment yields entering the planning watershed.

### 7. Chinook Salmon (Oncorhynchus tshawytscha)

**Status:** Federally Threatened

**Key Habitat:** Require pools 1-3 m deep with bedrock bottoms and cover in the form of underwater rocky ledges or large rocks. The pools usually have bubble curtains and shade provided throughout the day. Stream temperatures must be below 27° C. Suitable spawning areas are gravel beds with an optimum mixture of gravel and cobble of mean diameter 1-4 cm with less than 25% under 6.4 mm in diameter.

**Status within Plan Area and BAA:** No Class I fish habitat occurs within the THP area. Chinook have not been recorded in the BAA. While no occurrences have been documented in Grotzman Creek, habitat potentially exists within its lower reaches.

**Mitigations:** Watercourse protection measures contained in the THP will protect Class II habitat. Remediation of active and potential erosion sites along the appurtenant road system will lower sediment yields entering the planning watershed.

## Addendum 32(b) – Non-listed Species

### C. AMPHIBIAN SPECIES OF SPECIAL CONCERN WHOSE HABITAT AND RANGE OVERLAP THE THP AND BAA.

#### 1. Southern Torrent Salamander (Rhyacotriton variegatus)

**Status:** California protected and CDF&G "Species of Special Concern"

**Key Habitat:** Found in coastal forests of northwestern California, relatively common in preferred habitats of cold, well shaded permanent streams and spring seepages within redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood-conifer forests.

**Status within Plan Area and BAA:** None observed within the THP area during plan preparation; however this species has been documented by the NDDB within the BAA approximately 0.5 miles to the northwest of the THP area. Habitat for this species exists within the THP and BAA.

## Addendum 32(b) – Non-listed Species (Cont.)

**Mitigations:** Watercourse protection measures contained in the THP will protect Class II habitat. Remediation of active and potential erosion sites along the appurtenant road system will lower sediment yields entering the planning watershed.

### 2. Northern Red-Legged Frog (*Rana aurora aurora*)

**Status:** CDF&G “Species of Special Concern” and Category 2 Candidate for Federal Listing.

**Key Habitat:** Found in riparian areas and permanent bodies of relatively quiet water such as ponds, pools along streams, reservoirs, springs, lakes and marshes.

**Status within Plan Area and BAA:** None observed within the THP area during plan preparation, however this species is likely to exist within the BAA. Known occurrences are documented in the NDDB, outside of the BAA, on the Korbel, 7.5' USGS Quad.

**Mitigations:** Watercourse protection measures contained in the THP will protect Class II habitat. Remediation of active and potential erosion sites along the appurtenant road system will lower sediment yields entering the planning watershed.

### 3. Foothill Yellow-legged Frog (*Rana boylei*)

**Status:** CDF&G “Species of Special Concern”

**Key Habitat:** Prefers watercourses with bedload materials composed primarily of sand and gravels while larger rocks are sought out for cover. Regardless of season this ranid frog is rarely found far from permanent water. Tadpoles require water for at least three to four months while completing aquatic development.

**Status within Plan Area and BAA:** None observed within the THP area during plan preparation, however this species is likely to exist within the BAA. Known occurrences are documented in the NDDB, outside of the BAA, on the Korbel, 7.5' USGS Quad. Because of the high canopy covers, sunning sites are scarce within the THP area. However, potential habitat exists in the form of permanent water and suitable bedload materials.

**Mitigations:** Watercourse protection measures contained in the THP will protect Class II habitat. Remediation of active and potential erosion sites along the appurtenant road system will lower sediment yields entering the planning watershed.

### 4. Tailed Frog (*Ascaphus truei*)

**Status:** CDF&G “Species of Special Concern”

**Key Habitat:** Found in riparian areas where there are clear, cold swift-flowing mountain streams; sometimes found near water in damp forests or in more open areas in cold, wet weather. Key habitat components within cold swift-flowing streams are plunge pools and rocky substrates where tadpoles cling to surfaces with a large sucker like mouth while eggs are attached to the down stream side of rocks.

**Status within Plan Area and BAA:** None observed within the THP area during plan preparation; however this species is likely to exist within the BAA.

**Mitigations:** Watercourse protection measures contained in the THP will protect Class II habitat. Remediation of active and potential erosion sites along the appurtenant road system will lower sediment yields entering the planning watershed.

### 5. Del Norte Salamander (*Plethodon elongatus*)

**Status:** CDF&G “Species of Special Concern”

**Key Habitat:** Found primarily on old rockslide areas and rock outcrops under Douglas-fir and Redwood forest canopy. Commonly found among moss covered rock rubble, under slabs of bark or in decaying logs.

## Addendum 32(b) – Non-listed Species (Cont.)

**Status within Plan Area and BAA:** None observed within the THP area during plan preparation; however this species is likely to exist within the BAA. Potential habitat exists within the THP area in the form of LWD throughout the plan area. Known occurrences are documented in the NDDB, outside of the BAA, on the Korbel, 7.5' USGS Quad.

**Mitigations:** No salvage logging or removal of downed woody debris is proposed within the WLPZ. While there is no prohibition of salvaging LWD most downed woody debris observed within the THP area is unmerchantable and unlikely to be removed.

## D. REPTILE SPECIES OF SPECIAL CONCERN WHOSE HABITAT AND RANGE OVERLAP THE THP AND BAA.

### 1. North Western Pond Turtle (Emys marmorata marmorata)

**Status:** CDF&G “Species of Special Concern” and Category 2 candidate for federal listing.

**Key Habitat:** This species ranges from the Oregon border south to Kern County. Specific habitat includes areas of permanent water such as lakes, ponds, marshes, rivers, sloughs, and drainage ditches.

**Status within Plan Area and BAA:** Gannon Slough could potentially provide habitat for this species within the BAA. Habitat for turtles does not exist within then THP area.

**Mitigations:** Watercourse protection measures contained in the THP will protect Class II habitat. Remediation of active and potential erosion sites along the appurtenant road system will lower sediment yields entering the planning watershed.

## E. FISH SPECIES OF SPECIAL CONCERN WHOSE HABITAT AND RANGE OVERLAP THE THP AND BAA.

### 1. Coastal Cutthroat Trout (Oncorhynchus clarki clarki)

**Status:** California Species of Concern.

**Key Habitat:** Migrating fish require small, low gradient, cool, and well –shaded coastal streams deep holding pools with cover. Spawning occurs in cool, clear, and well-oxygenated streams. Preferred water temperatures are 10-15 degrees C. Juveniles migrate out to sea in 1 to 3 years. Some coastal cutthroat trout may spend their entire lives in fresh water and are therefore considered non-anadromous. Most of these populations occur far upstream.

**Status within Plan Area and BAA:** No coastal cutthroat trout habitat occurs within the THP area. In the BAA, cutthroat trout have been documented in Jolly Giant Creek and resident cutthroat could exist within the lower reaches of Grotzman and Beith Creeks. Occurrences of cutthroat have been documented in Gannon Slough within the BAA.

**Mitigations:** Watercourse protection measures contained in the THP will protect Class II habitat. Remediation of active and potential erosion sites along the appurtenant road system will lower sediment yields entering the planning watershed.

## F. BIRD SPECIES OF SPECIAL CONCERN WHOSE HABITAT AND RANGE OVERLAP THE THP AND BAA.

### 1. Northern Goshawk (Accipiter gentilis)

**Status:** CDF&G “Species of Special Concern”, BOF Sensitive and Federal Sensitive Species.

**Key Habitat:** Prefers foraging in wooded areas intermixed with meadows and various types of natural openings using dead-topped trees and snags for observing and prey-plucking perches. Feeds on birds and small mammals. Preferred habitat consists of mature to late seral stage stands of conifers with a hardwood component. Goshawks are also known to prefer habitat that supports good populations of their primary prey species - diurnal squirrels and forest grouse.

## Addendum 32(b) – Non-listed Species (Cont.)

**Status within Plan Area and BAA:** Habitat suitability is poor due to the THP's coastal location.

**Mitigations:** The retention of all snags and decadent and deformed trees of value to wildlife as described in Section II – Item 33 will provide future potential habitat components for this species.

### 2. Golden Eagle (*Aquila chrysaetos*)

**Status:** CDF&G "Species of Special Concern" and BOF Sensitive.

**Key Habitat:** Relatively common resident of low density rolling foothills and mountain areas. Needs large stretches of open country for foraging, eating mostly lagomorphs and rodents; also other mammals, birds, reptiles and carrion.

**Status within Plan Area and BAA:** Habitat suitability is poor due to the THP's coastal location.

**Mitigations:** The retention of all snags and decadent and deformed trees of value to wildlife as described in Section II – Item 33 will provide future potential habitat components for this species.

### 3. Osprey (*Pandion haliaetus*)

**Status:** CDF&G "Species of Special Concern", BOF Sensitive.

**Key Habitat:** Nests on stick platforms at the top of large snags or dead-topped trees. Uses rivers, lakes, reservoirs, bays, estuaries and surf zones to prey on fish, although small mammals, birds, amphibians, reptiles and invertebrates may be taken.

**Status within Plan Area and BAA:** Several known Osprey nests exist within the northern portion of the BAA, on the north slope of Fickle Hill. The Mad River provides quality forage habitat for Osprey, which flows north westerly just out side of the BAA. No ospreys are known to have historically nested within the southern slope of the BAA. Nesting habitat exists throughout the BAA in the form of dead-topped Douglas-fir and Western red cedar trees. Habitat suitability within the THP area is low considering the ridgeline location and distance from suitable forage habitat.

**Mitigations:** The retention of all snags and decadent and deformed trees of value to wildlife as described in Section II – Item 33 will provide future potential habitat components for this species.

### 4. Sharp-Shinned Hawk (*Accipiter striatus*)

**Status:** CDF&G "Species of Special Concern"(breeding)

**Key Habitat:** Sharp-shinned Hawk's breeding and wintering habitat is characterized by woodlands of young or open forests with a variety of plant life forms (Johnsgard 1990). Sharp-shinned hawks are a common migrant and winter visitor; uncommon summer resident and breeder" (Harris 1991). They occur in more open woodlands, forest edges and riparian corridors.

**Status within Plan Area and BAA:** Not observed within the THP area during mid-canopy stand searches. Within the THP area habitat is marginal at best. This species has been not observed in the BAA. Habitat occurs sparingly throughout the BAA. The RPF has investigated all snags and large wildlife trees for the presence of any wildlife species that may be utilizing them for nesting, roosting, or perching. No nest trees or perch trees with signs of nests or whitewash were observed during plan preparation.

**Mitigations:** The retention of all snags and decadent and deformed trees of value to wildlife as described in Section II – Item 33 will provide potential future habitat components for this species. In addition, the application of un-evenaged management on portions of the THP area will provide post harvest habitat.

### 5. Cooper's Hawk (*Accipiter cooperii*)

**Status:** CDF&G "Species of Special Concern"(breeding)

## Addendum 32(b) – Non-listed Species (Cont.)

**Key Habitat:** Cooper's Hawk nest in a mosaic of deciduous or mixed forests rather than in the interior of contiguous stands (Johnsgard 1990). Asay (1987) concluded that Cooper's Hawks may nest in many different tree species and habitat in California, however, the primary nesting habitat in this state is live oak stands. Reynolds (1983) demonstrated the use of mature mid-serial Douglas-fir stands with tightly closed canopy as nesting locations in Oregon.

**Status within Plan Area and BAA:** Not encountered inside the THP or the assessment area during plan preparation. No nesting habitat exists within the THP or BAA.

**Mitigations:** The retention of all snags and decadent and deformed trees of value to wildlife as described in Section II – Item 33 will provide potential future habitat components for this species. In addition, the application of un-evenaged management on portions of the THP area will provide post harvest habitat.

### 6. Great Blue Heron (Ardea herodias)

**Status:** Board of Forestry sensitive species

**Habitat:** Feeds primarily on fish (75% of its diet), however, also eats small rodents, amphibians, snakes, lizards, insects, crustaceans, and occasionally small birds. Stands motionless or walks slowly while searching for prey in shallow water or, less commonly, in open fields. Perches and roosts in secluded tall trees. Nests in colonies in tops of secluded large snags or live trees.

**Status within Plan Area and BAA:** None observed within the THP. The THP's timberstands were physically inspected for the presence of roosting colonies during THP layout with none observed. The higher elevations of the BAA and the location of the THP don't provide habitat for this species. A rookery site is recorded in the NDDB in the northeast portion of the BAA.

**Mitigations:** Prior to operations, the RPF shall continue raptor surveys during the balance of timber marking. If any raptor nests or roosting colonies are discovered within or nearby the THP area, the RPF shall contact the Department of Fish and Game to develop mitigation measures to protect the nest site.

### 7. Great Egret (Ardea alba)

**Status:** Board of Forestry sensitive species

**Habitat:** Feeds in shallow water and along shores of estuaries, lakes, ditches, and slow-moving streams, in salt ponds and mud flats. Eats mainly fish, amphibians, snakes, snails, crustaceans, insects, and small mammals. Roosts communally in trees, nests in large trees, usually near water. Nesting colony must be isolated from human activities.

**Status within Plan Area and BAA:** None observed within the THP area or the BAA. Potential habitat for this species occurs in the bottom lands around Gannon Slough in the southwest portion of the BAA.

**Mitigations:** Prior to operations, the RPF shall continue raptor surveys during the balance of timber marking. If any raptor nests or roosting colonies are discovered within or nearby the THP area, the RPF shall contact the Department of Fish and Game to develop mitigation measures to protect the nest site.

### 8. Ruffed Grouse (Bonasa umbellus)

**Status:** CDF&G "Species of Special Concern"

**Key Habitat:** Requires a mosaic of habitats; riparian stands with young and old deciduous trees, brushy areas interspersed with herbaceous inclusions, and conifer stands for cover (CDF&G 1990).

**Status within Plan Area and BAA:** This species has not been observed within the THP area or BAA. Habitat with the potential to support this species is common throughout the BAA.

## Addendum 32(b) – Non-listed Species (Cont.)

**Mitigations:** Given this species preference for edges and brushy areas, operations conducted under this THP should not significantly impact ruffed grouse or their habitat.

### 9. Vaux's Swift (Chaetura vauxi)

**Status:** CDF&G "Species of Special Concern"

**Key habitat:** Northern California summer resident. Nests in large hollow trees and snags. Prefers redwoods and Douglas-firs, especially tall and burned out stubs. Also nests in other large conifers and occasionally in chimneys (CDF&G 1990). Vaux's swifts were consistently more abundant in old-growth stands and were strongly correlated with densities of live trees >40" d.b.h. and densities of snags >20" d.b.h. (Lundquist et. al. 1990).

**Status within Plan Area and BAA:** Although no population trend is available for Vaux's swifts, this species is a common summer resident throughout the north coast. No specific surveys were implemented to detect this species.

**Mitigations:** The retention of all snags and decadent and deformed trees of value to wildlife as described in Section II – Item 33 will provide potential future habitat components for this species. In addition, the application of un-evenaged management on portions of the THP area will provide potential post harvest habitat.

### 10. Purple Martin (Progne subis)

**Status:** CDF&G "Species of Special Concern"

**Key Habitat:** Woodlands and low-elevation coniferous forest of Douglas-fir, ponderosa pine, and Monterey pine. Nests mostly in old woodpecker cavities. (CDF&G 1990).

**Status within Plan Area and BAA:** Uncommon summer resident and breeder (Harris 1991). This species was not observed inside the THP area or BAA and is reportedly rare in this region. Habitat for this species exists in large, predominant Douglas-fir and Western red cedar snags and decadent and deformed trees of value to wildlife.

**Mitigations:** The retention of all snags and decadent and deformed trees of value to wildlife as described in Section II – Item 33 will provide potential future habitat components for this species. In addition, the application of un-evenaged management on portions of the THP area will provide potential post harvest habitat.

## G. MAMMAL SPECIES OF SPECIAL CONCERN WHOSE HABITAT AND RANGE OVERLAP THE THP AND BAA.

### 1. Townsend's Western Big-Eared Bat (Corynorhinus townsendii)

**Status:** CDF&G "Species of Special Concern"

**Key Habitat:** Unknown

**Status within Plan Area and BAA:** No occurrences recorded within the BAA. The habitat relationships of this species within timberlands remain unknown. Use of redwood "goose pens" remains undocumented. No bats were observed during THP preparation.

**Mitigations:** Although this species is not known to occur in the area, the retention of all snags in the THP area will provide future potential roosting structure. Operations conducted under this THP should not significantly impact Townsend's western big-eared bats or their habitat.

### 2. Red Tree Vole (Arborimus pomoe) (AKA Sonoma tree vole)

**Status:** CDF&G "Species of Special Concern"

## Addendum 32(b) – Non-listed Species (Cont.)

**Key Habitat:** Frequents mature and other stands of Douglas-fir, redwood, or mixed evergreen trees in fog belt (CDF&G 1990).

**Status within Plan Area and BAA:** No nests were observed within the THP area. However, red tree voles are documented within the BAA as noted on the NDDB. This particular type of habitat exists within the THP and throughout the BAA. Given the red tree vole's habitat preferences, there is abundant habitat throughout the THP and BAA.

**Mitigations:** Due to the common occurrence of red tree voles within a variety of stand types, and the amount of post harvest habitat available, operations conducted under this THP should not significantly impact this species or its' habitat.

### 3. Pacific Fisher (*Martes pennanti*)

**Status:** CDF&G "Species of Special Concern" and Federal Sensitive Species. The U.S. Fish and Wildlife Service recently reviewed a petition to list the Pacific fisher (*Martes pennanti pacifica*) as an endangered species under the Endangered Species Act and determined that listing was not warranted (Federal Register 1991).

**Key Habitat:** The petition stated that fishers prefer large, contiguous blocks of mature and old growth coniferous forest and that this habitat has declined substantially. However, after a complete review of the literature (published and unpublished) and consultation with researchers, the Service determined that little evidence exists concerning the habitat preferences of fishers. Moreover, it has not been demonstrated that fishers prefer mature/old-growth forests, and in fact, the petition to list stated that fishers could be found in a broad range of forest types. The Service concluded by stating, "Insufficient information exists in the literature to draw reliable conclusions regarding habitat preferences by Pacific fishers and more importantly, to assess what impact alteration of forest habitat with the subspecies' range has had on population viability." Recent clear cuts are of little habitat value to fishers, but they will apparently forage in the area once a dense cover of vegetation has been established (Mullis 1985). Riparian areas are also regarded as important fisher habitat (Zielinski pers. comm.).

**Status within Plan Area and BAA:** No occurrences of fishers have been recorded in the BAA. Specific surveys have not occurred for this species within the THP area.

**Mitigation:** The retention of snags, downed woody debris within the WLPZ, and the application of selective harvesting will provide structural diversity to the harvested stand. Operations conducted under this THP should not significantly impact fishers or their habitat.

### 4. White-footed vole (*Arborimus albipes*)

**Status:** California species of special concern, and a Category 2 candidate for federal listing.

**Key Habitat:** The range of this species in California is not well understood, and it may not occur, or is very rare on this ownership as indicated by Ingles (1965). Maser (1966) suggested that the species occupies a coastal strip of unknown width. White-footed voles are a terrestrial species related to mature forests with large trees, 20-100% crown closure, and riparian habitats. The leaves of red alder make up a large portion of the diet of this species. This vole tends to nest on the ground, under logs, stumps, or rocks (Zeiner et al. 1990). Alteration or degradation of riparian habitats as has occurred in past logging practices, may have been detrimental to this species, but data to determine population status is lacking (Williams 1986).

**Status within Plan Area and BAA:** No observations of this species have been documented, however the THP area and BAA provides habitat as described above.

**Mitigations:** Retention of all hardwoods (red alder) within the WLPZs and the watercourse protection measures stated in Item 26 will provide potential post harvest habitat.

## **SECTION IV**

### **CUMULATIVE IMPACT ASSESSMENT**

**State of California  
Board of Forestry  
Cumulative Impact Assessment**

1. Do the assessment areas of resources that may be affected by the proposed project contain any past, present, or reasonably foreseeable probable future projects?

Yes X      No \_\_\_\_\_

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

Yes X      No \_\_\_\_\_

**Past Activities:**

The proposed THP is located in the Mad River Slough Planning Watershed (ID v2.2: 1110.000502). Past historic logging, ranching, road building, and urban development are partly responsible for the impacts to the Mad River Slough. Past logging of the old growth during the mid-1800's followed by frequent burning for conversion caused significant post-burn erosion of exposed sandy soils. This management activity occurred for 50 years or so and was followed by a lag in timber harvesting until the 1940's and the 1950's when another logging effort occurred in response to the demand created by World War II and the post war housing boom. During this period, many of the roads present today were constructed and much of the watershed clearcut. Erosion however was likely less than the previous, because widespread broadcast burning after logging was not employed. The third entry into the watershed began in the late 1980's and continues to the present. This period is characterized by smaller harvest acreage, reforestation, less road building, use of cable yarding systems, and more selective harvesting methods. As a result of these changes in harvesting and logging methods, increases in erosion are significantly minor to the past disturbance due to the application of forest practice regulation and Best Management Practices (BMP's).

**Impacts:**

Silvicultural practices prior to the Forest Practice Rules tended to be large with no regulations concerning shade protection on watercourses, the limitations on removing timber on unstable areas, or spatial arrangement of harvest units. Silviculture was predominantly clearcut in the early and mid 1900's. These clearcuts at such a large scale have been shown to create direct sediment impacts. In addition, because the practices prior to the modern Forest Practice Rules did not recognize the protection of stream corridors, most of the trees along streams were removed. Removal of streamside timber and vegetation along the larger watercourses may have resulted in increased water temperatures.

Pre-Forest Practice Act timber operations directly impacted watersheds in the form of in-stream roads and landings, streamside road and landings, Humboldt crossings, and cut and fill road and skid trail construction on steep and unstable hillsides. Impacts to watercourse channels included direct deposition of soil, slash and logging debris into the channel areas. Old roads were not always maintained and crossing facilities were designed to hold up for individual operations, rather than the long term. Many times crossings facilities consisted of stumps and logs (Humboldt crossing) or in some cases, crossings on small streams consisted only of a temporary soil fill that were periodically removed by winter rain.

Numerous slides associated with roads and landings have occurred following earthquakes and heavy rainfall events from 1996 to 1998. These slides have both natural and human caused trigger mechanisms. Common human caused features are such things as fills placed on steep slopes, over steepened fill faces, buried debris incorporated into road and landing fills, and fills in headwall swales. Most construction features have been associated with roads built in the 1960s and 1970s. However, some of the above features, date back to the railroad era. Long term impacts from the old logging tend to decrease with time since the activities occurred. Over time, impacted watercourse channels have reached greater levels of stability, even so there is still likely to be some watercourse bank erosion where old fills and soil depositions are still seeking equilibrium and natural inner gorge slumping will be an on-going process.

Early land development in the lower elevations of the watershed altered many of the natural reaches of watercourses to facilitate road and rail road construction, urban development, agricultural development and rural homes. These activities generally did not use practices that protected the beneficial uses of water and resulted in the degradation of some streams in the assessment area. The majority of the WAA is made up by the Arcata Bottoms, an area that is extensively managed for grazing and dairy production. Most, if not all, watercourses have been affected by land practices in this area, including the draining of wetlands to establish grazing lands, the removal of vegetation along stream corridors, and grazing along and within stream channels.

Resources Affected:

Resources affected by the past activities include overall water quality, fish and aquatic species, and in-stream fish and aquatic species habitats resulting from old watercourse crossings, fills, old Humboldt crossings decomposing culverts and undersized culverts throughout the planning watershed. Biological resources were affected within the assessment area primarily in the form of conversion for grazing and urban development.

3. Will the proposed project, as presented, in combination with past, present, or reasonably foreseeable probable future projects cause or add to the significant cumulative impacts in any of the following resource subjects?

Yes after Mitigation (a)	No after Mitigation (b)	No Reasonably Potential Significant Effects (c)
1. Watershed	X	
2. Soil Productivity		X
3. Biological		X
4. Recreation		X
5. Visual		X
6. Traffic		X
7. Noise	X	

4. If column (a) is checked in (3) above describe why the expected impacts cannot be feasibly mitigated or avoided and what mitigation measures or alternatives were considered to reach this determination of impacts. If column (b) is checked in (3) above describe what mitigation measures have been selected which will substantially reduce or avoid reasonably potential significant cumulative impacts except for those mitigation measures or alternatives mandated by application of the rules of the Board of Forestry.

It is the RPF's contention that as the Forest Practice Rules are properly applied throughout the THP area during the conduct of timber operations, significant adverse cumulative impacts should not occur. Special mitigation measures are discussed and listed throughout this THP in order to meet the intent of the Forest Practice Act and Forest Practice Rules; these measures are designed to further protect natural resource values. For the reasons discussed in the analysis provided below, compliance with the Forest Practice Rules and with site-specific mitigation measures included in this THP and THPs throughout the assessment area are expected to help insure that incremental impacts of the operations proposed under this THP do not have a reasonable potential to combine with the impacts of other projects to cause significant adverse cumulative impacts. For confidentiality reasons information related to archaeology is included in the Confidential Archaeological Addendum in Section VI of the plan.

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## 5. Provide a brief description of the assessment area used for each resource subject.

<b>Watershed</b>	The watershed assessment area was established using Calwater planning watershed maps. The THP area is contained in one Calwater planning watershed. The Watershed Assessment Area (WAA) that may be affected by the Schmidbauer THP is the Mad River Slough CAL Planning Watershed (ID# 1110.00502). The total Watershed Assessment Area is approximately 15,046 acres as shown on the WAA map. The planning watershed is large enough to include other projects that might be combined with this proposed THP to produce cumulative adverse impacts. An emphasis to the western portion of the WAA is given to compensate for the relatively large area of non-timberland that exists within the WAA. In this way, if cumulative adverse impacts do exist, or have potential to exist, they will be recognizable and not overlooked or minimized.
<b>Soil Productivity</b>	This area was chosen in accordance with the Board of Forestry Technical Rule, Addendum #2. The only area where harvest activities could influence the productivity of the soil is the plan area and its associated roads.
<b>Biological</b>	The geographic assessment area for biological resources is the THP area + 1.3 mile radius. The justification for this particular assessment area is based upon the presence of nearby Northern spotted owls, which could be potentially impacted through disturbance and habitat modification. The 1.3 mile assessment area is large enough to include projects that may impact biological resources, but yet also small enough so that if cumulative adverse impacts do exist, or have potential to exist, they will be recognizable and not overlooked or minimized. The THP's chosen BAA should reasonably provide for an adequate assessment of aquatic, terrestrial and avian biological resources.
<b>Recreational</b>	The recreational assessment area chosen consists of the acreage of the THP and an additional 300 feet just outside the THP boundary. This area was used because it includes the area where recreational activities are most likely to be affected by the proposed THP. The types of recreational activities used and the number of people involved were considered when choosing the assessment area.
<b>Visual</b>	The assessment area for visual resources is the logging area that is readily visible to significant numbers of people who are no further than three miles from the timber operations. At distances of greater than 3 miles, the proposed project is not easily discernable and becomes less significant to visual resources. The RPF considered how far the proposed timber operation was from the nearest point that is in view of the operation to a significant number of people. Also considered, were views of the operation from public roads and parks, hiking trails, and stationary vista points.
<b>Traffic</b>	The traffic assessment area involves the first roads not part of the THP on which logging traffic must travel. This assessment area was chosen because it is the intended haul routes for this operation, and represents the area where logging vehicles are most likely to affect traffic on public roads and other private roads used by the general public. The evaluation of the assessment area considered which roads are public vs. private, the frequency of use by logging vehicles, traffic congestion, safety issues, and maintenance problems.
<b>Noise</b>	The noise assessment area is all areas within 1 mile of the logging area. This area is chosen to include all potential residential areas that may be affected by noise within the vicinity of the THP area. The evaluation of the assessment area considered residential areas near the logging area, and the baseline levels of background noise preexisting within the assessment area.

## 6. List and briefly describe the individuals, organizations, and records consulted in the assessment of cumulative impacts for each resource subject. Records of the information used in the assessment shall be provided to the Director upon request.

***Consultation with Experts and Agencies:***

Mark Andre – City of Arcata

Doug Kelley, Habitat Restorationist, Humboldt Fish Action Council; Personal knowledge Grotzman and Beith Creek

Mark Moore – DFG Eureka, Fisheries Biologist; coho salmon pre-consultation July 31, 2008

Michael Wallace – DFG Arcata, Natural Stocks Assessment Project; Gannon slough and Beith Creek fish sampling

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Digital Orthoquad for Arcata South Quadrangle. Image dates 1998 & 2005

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## Board of Forestry Technical Rule Addendum No. 2

### Cumulative Impacts Assessment

#### Past, Present and Future Projects

All reasonably known past and present, and reasonably foreseeable probable future projects, as well as known naturally occurring events were considered in the evaluation of cumulative impacts. Personal observation of the harvesting areas and roads in the area were also included.

#### A. Past Conditions and Activities within the CIAA

Timber harvesting within the forested portions of the Mad River Slough watershed began in the mid 1800's. Riparian harvests occurred between 1860 and 1890 and again in the 1950's and 60's. Rail lines were built beginning in the 1870's. The rails were removed by the late 1920's and "Steam Donkeys" began harvesting in the late 1880's. As the rails were removed, roads were constructed in their place. Tractor operations replaced Steam Donkeys as the post war era method of log removal. The 1950's harvests occurred in places that previous harvest methods could not access. Most, if not all areas were tractor logged, regardless of slope or proximity of a watercourse.

In addition to a long history of commercial timber operations, the watershed assessment area has experienced extensive conversion and development. Most of the City of Arcata is located within the WAA, including the community of Sunny Brae and portions of Bayside. Most of the Arcata Bottoms occur within the lower portions of the watershed which are intensively managed for grazing and dairy production. These practices have greatly altered drainage of the lower reaches of watercourses draining from the forested slopes above.

#### B. Past and Present Projects within the CIAA

The Cumulative Impact Assessment Area (CIAA) that may be affected by the Schmidbauer THP is comprised of the Watershed Assessment Area (WAA) and Biological Assessment Area (BAA), totaling 17,486 acres as shown on the CIA Map in Section IV. The WAA contains approximately 15,046 acres as shown on the WAA map in this Section. The BAA contains approximately 4,341 acres. About half of the BAA overlaps with the WAA, adding an additional 2,440 acres to the CIAA. The following tables list the approved Timber Harvest Plans and the approximate acreage within the CIAA during the past ten years. The acreage of activity (2,237 acres) equates to approximately 13% of the total assessment area.

THP	Harvest Acreage	Silviculture	Harvest method	Legal	Status
06-164	115.5	SEL, VR	TR, FO	S34, T6N, R1E	Approved/Active
02NTMP-013	90	SEL, CT	TR, FB, FO, C/S, C/H	S35, T6N, R1E	Complete/Stocked (NTO#3)
02NTMP-043	40	SEL	TR, FB, FO, C/S, C/H	S35, T6N, R1E; S1, 2, T5N, R1E	Complete Stocked (NTO#1)
02-026	8	ST/SS	TR, FB, FO	S3, T5N, R1E	Complete Stocked
01-263	N/A	CC	TR, FB, FO	S33, T6N, R1E	THP Closed (11/28/07)
00-234	N/A	SEL	TR, FO	S34, T6N, R1E	Never Operated - Complete
99-011	10	CC	TR	S35, T6N, R1E	Complete
				S12,13, T6N, R1E; S7,8 T6N, R2E; S1,2,22, 23,25,26,27,35,36, T5N, R1E	
99NTMP-014	785	SEL, REH	TR, C		Complete/Stocked (Active under NTO#31)
99NTMP-033	1155	SEL, CT	TR, C	S27,28, T6N, R1E; S30, T5N, R2E	Complete/Stocked
98-197	34	CT, SH/REM	TR, FO, C/H	S35, T6N, R1E; S1,2, T5N, R1E	Complete/Stocked
<b>TOTAL</b>	<b>2,237</b>				

Following a routine reconnaissance of the CIA's roads, watercourse crossings, and past timber harvesting activities, no continuing or existing on-going significant adverse impacts were observed from the above past projects. Therefore, the past plans that are listed above are not expected to combine with the proposed THP to cause cumulative adverse impacts to an resource area. It is the opinion of this RPF that due to the fact that harvest activity within the past 10 years has been minimal, is likely that older projects on timberlands may have poorly drained roads that may be impacting the watershed. However, no

## Past, Present and Future Projects (Cont.)

effects or significant impacts were observed during the assessment. Overtime, projects on private lands will be submitted that will treat these areas as they are harvested under modern Forest Practice Rules.

### C. Future Projects within the CIAA

"Reasonably foreseeable probable future projects" is defined by the Forest Practice Regulations to mean: "projects with activities that may add to or lessen impact(s) of the proposed THP including but not limited to: 1) if the project is a THP on land which is controlled by the THP submitter, the THP is currently expected to commence within but not limited to, 5 years or, 2) if the project is a THP on land which is not under the control of the THP submitter the THP has been submitted or on-the-ground work including THP preparation has materially commenced, or 3) if the project is not a THP, and a permit is required from a public agency, and the project is under environmental review by the public agency, or 4) if the project is one which is undertaken by a public agency, the agency has made a public announcement of the intent to carry out the project."

Timber production is not the principal land use within the CIAA. However, the timbered portions of the assessment areas are expected to continue under extensive forest management, similar to that of the past ten years. As shown above the majority of projects within the CIAA are NTMPs. As such these NTMPs will continue to be periodically harvested. The adjacent property which contains the THP 00-234HUM was acquired by the City of Arcata and is intended to be included into the Cities NTMP (99NTMP-033), and likely would have some form of harvest within 10 years.

## APPENDIX – TECHNICAL RULE ADDENDUM NO. 2

### WATERSHED OVERVIEW

The THP area is located within the Mad River Slough planning watershed. The Mad River Slough planning watershed is approximately 15,046 acres. The THP area drains to Grotzman Creek a tributary of Beith Creek. Beith Creek drains to Gannon Sough which is a tributary of Humboldt Bay. Grotzman Creek is a second order stream with approximately 3,600 feet of blue line stream according to the USGS Arcata South 7.5' Quadrangle. Grotzman Creek drains a watershed of approximately 1 square mile with elevations ranging from sea level at Humboldt Bay to over 1,200 feet in the headwater areas. Second and third growth conifer and hardwood forests dominant the forested portions of the watershed.

### 1. Watershed Resources

Watershed impacts are based on significant on-site and down-stream cumulative effects on beneficial uses of water, as defined in the Water Quality Control Plan for the North Coast Region, as adopted by the North Coast Regional Water Quality Control Board on December, 9, 1993, and subsequently approved by the State Water Resources Control Board on August, 18, 1994.

916.9.1(b) Acknowledgement of adverse conditions. It is the RPF's opinion that adverse watershed conditions related to the habitat of anadromous salmonids may have existed in the past within the assessment area as the result of past timber harvesting, and other activities carried out under previous regulatory and management regimes. This in combination with urban development (City of Arcata) and extensive grazing in the Arcata Bottoms has had a direct impact on coho salmon. The installation of tide gates, stream diversions, and other obstructions may have limited passage for coho into the upper portion of the watershed. Beyond sediment inputs, storm water run-off from urban areas may further impact water quality.

This judgment is based on anecdotal information, visual observations, and photographic documentation of early unregulated logging and road building that took place prior to the Forest Practice Act. With the modern application of best management practices and natural recovery processes, the current condition of the watershed has significantly improved over past conditions. The current state of the watershed is one of continuing improvement and restoration. In recent years the City of Arcata and various non-profit organizations have conducted numerous restoration projects within the major watercourses of the WAA. These projects range from in-stream improvement projects aimed at fishery habitat restoration to the removal of exotic vegetation along watercourses that have been introduced as result of urban influences. Many of the tide gates have been removed or reconfigured to allow for fish passage, and many of the cities culverts have been upgraded to the same aim. Given current management practices and long-term strategies this improvement is expected to continue.

## Schmidbauer THP

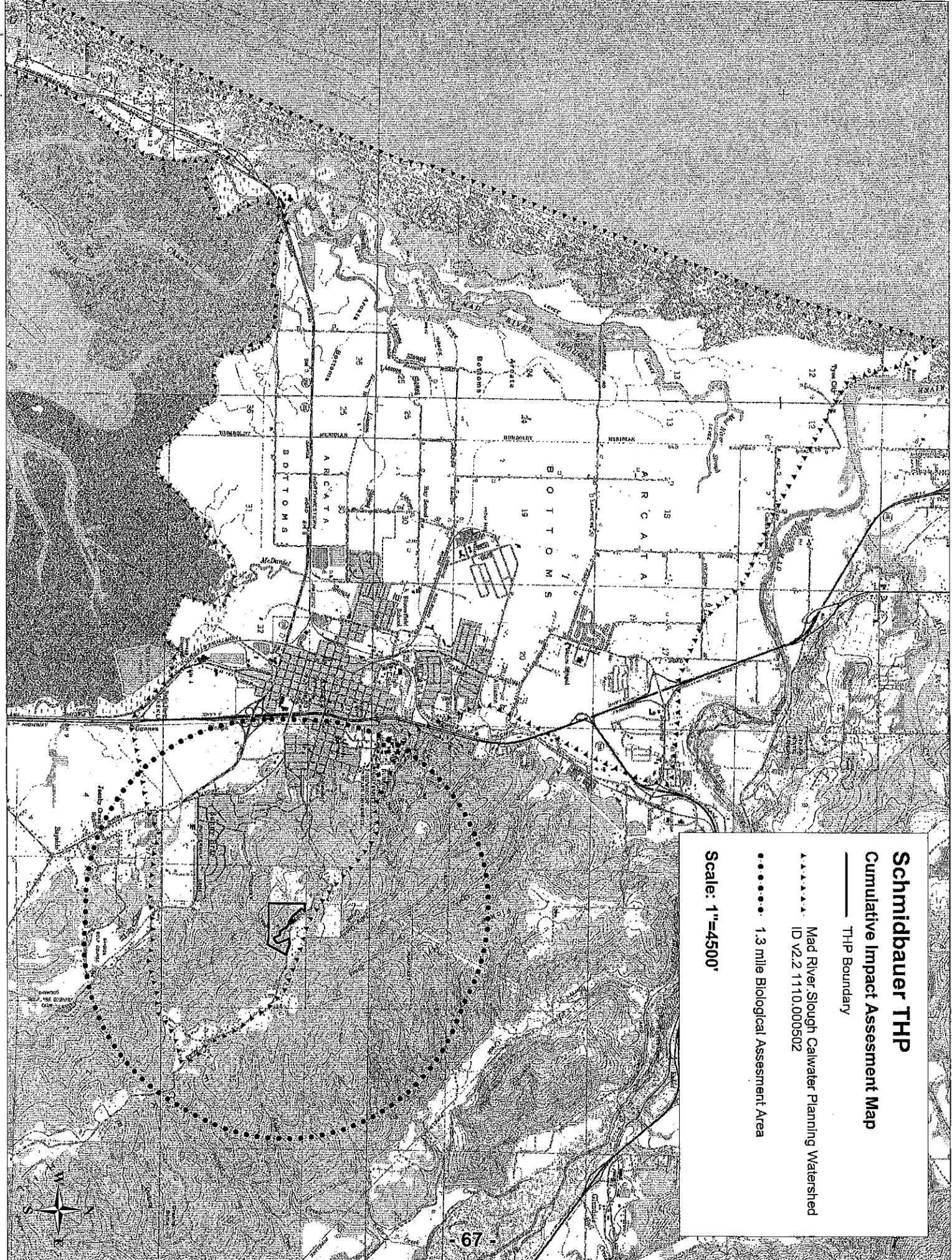
### Cumulative Impact Assessment Map

THP Boundary

Mad River Slough Calwater Planning Watershed  
ID v2.2 1110.000502

1.3 mile Biological Assessment Area

Scale: 1"=4500'



## 1. Watershed Resources (Cont.)

### A. Beneficial Uses

The beneficial uses within the WAA were taken from the "Water Quality Control Plan for the North Coast Region" (1994) under the heading "Minor Coastal Streams". The uses are municipal supply, agricultural supply, industrial supply, ground water recharge, freshwater replenishment, hydropower generation, water contact recreation, non-contact water recreation, commercial sport fishing, warm and cold freshwater habitat, wildlife habitat, rare and endangered species habitat, migration habitat for anadromous fish, spawning and rearing habitat for fish, estuarine habitat, and aquaculture.

This THP addresses the protection of the various beneficial uses by protecting downslope fisheries habitat through watercourse protection measures and slope stabilization measures. These measures are contained in Item 18 and 26 in Section II of the THP. No significant adverse impact to the beneficial uses of water is expected to occur as a result of this THP or subsequently combine with past or future projects within the Watershed Assessment Area to create negative cumulative watershed effects.

### B. Present Watercourse Conditions within WAA and THP

N = None	S = Slight	M = Moderate	H = High	E = Extreme
Watercourse Condition	Grotzman Creek		THP Class II	
Embedded Gravels		M		M
Filled Pools		M		M
Aggradation		M		M
Bank Cutting		M		S
Bank Mass Wasting		M		S
Downcutting		S		S
Scouring		M		S
Large Organic Debris		M		M
Small Organic Debris		H		H
Stream-side Vegetation		H		H
Recent flooding		N		N
Fisheries habitat		S/M		N

### C. Past Projects and Future Impacts within the WAA

Based upon the review of the assessment area and the knowledge of watercourse conditions on and off of the proposed project area; have past projects in the channels of watersheds within the assessment area resulted in any of the following impacts?

1.  Yes  No    Increased sediment inputs that embedded gravels, filled pools or caused channel aggradation within some portion of the stream system?

Given the past disturbance known to have occurred within the watershed, as evidenced by roads, skid roads, watercourse crossings, old slide scars and stumps; sediment yields were certainly higher in the past immediately following the last major logging entry that occurred in the 1960's. Although past impacts certainly occurred, much of the sediment inputs have been transported outside of the assessment area due to the duration of time that has elapsed since impact, and from the gradient of the streams. Sediment sources still exist however, and many of the WAA's Class III streams contain old Humboldt or fill crossings that were never removed. These Class III watercourses tend to have low flows, but slowly bleed sediments from these sites during times of high rainfall when flows are elevated. The combination of such sites with other erosion sources from roads, urban and rural developments and grazing in the lower reaches of the watershed have lead to increased sediment inputs.

This THP is expected to lower sediment yields into the Planning Watershed. This shall be accomplished by the treatment of several active erosion sites within the THP area, and the hydrological disconnection of roads from watercourses within the THP area and appurtenant roads. This in combination with other mitigation measures proposed in the THP are expected to result in long-term sediment savings.

## 1. Watershed Resources (Cont.)

2.  Yes  No Increased channel downcutting or bank erosion as a result of increased flows, sediment transport, or other channel modifications?

There may have been past accelerated downcutting as a result of increased flows and/or sediment transport. Downcutting was observed in portions of the WAA. These watercourses were generally U-shaped but contained an extremely incised narrow channel with steep unstable banks, which are characteristic of a watercourse that is downcutting. Old fill crossings and areas of accelerated surface flow also showed signs of downcutting. Past road construction, watercourse crossings and the lack of maintenance within these WLPZ areas have similarly caused bank erosion, scouring and downcutting within the WAA and THP area. Sediment still exists, primarily in the form of old Humboldt crossings. However, much of this sediment has already been downcut, eroded, and transported out of the planning watershed. Sediment transport is not expected to be effected relative to pre-harvest levels. This conclusion is based on the WLPZ established on the watercourses within the THP and the mitigation proposed at numerous stream crossings within the THP.

3.  Yes  No Increased water temperature resulting from canopy removals along stream channels?

Based upon observations made during THP layout, canopy cover within the planning watershed is high in the upper portions of the WAA and very low in the lower reaches. Based on recent water quality sampling, stream temperature in Gannon Slough is considered slightly elevated for coho salmon. Gannon slough is almost void of any canopy cover and is surrounded by grazing lands and urban developments. It is likely that other streams in the WAA have the same temperature issues in their lower reaches (i.e. Janes Creek, Jolly Giant Creek, etc). The influence of the Humboldt Bay also has an influence on temperature as brackish water surges in and out of the lower reaches of these watercourses.

Upslope, the watercourses enter dense redwood forest and temperature does not appear to be a concern. This THP is not expected to increase stream temperatures within the watershed. This conclusion is based upon watercourse protection measures which will ensure that any alteration to the WLPZ canopy will be minor and not result in any significant water temperature increases.

4.  Yes  No Inputs of unstable organic debris to streams?

It is likely that past operations introduced unstable organic debris into stream channels. Old Humboldt crossings, streamside roads and landings resulted in past debris torrents and/or debris scouring watercourse channel and banks. Based upon conditions observed during THP layout, it appears that debris was deposited into watercourse channels throughout the WAA during the previous logging entries. This material, upon mobilization during peak flows, might have caused debris torrents and scoured watercourse channels and banks. The application of a WLPZ will ensure post harvest conifer stocking capable of providing root support, evapotranspiration and interception for slope stability. Furthermore stream crossings are planned and designed to prevent inputs of organic debris into watercourses. No sidecating is allowed where materials can reach a watercourse, and trees are general directionally felled away from watercourses. The LTO is further instructed to remove any debris that may accidentally end up in a watercourse.

5.  Yes  No Removal of LWD leading to a loss of pool habitat?

Watercourses in the lower reaches, especially those in the Arcata Bottoms have very low levels of LWD. It is not clear if past operations removed significant amounts of large woody debris from the stream channels in the upper WAA. The Class II watercourse in THP area contains moderate amounts of LWD. Other watercourses observed within the Watershed Assessment Area contain moderate amounts of large woody debris contributing to pool habitat. To ensure future sources of large woody debris for pool formation and aquatic habitat, this THP proposes the retention of all downed large woody debris within WLPZs. In addition, the non-merchantable downed logs throughout the THP shall be retained. No impacts to this habitat component can reasonably be expected.

6.  Yes  No Chemical inputs to streams?

Because of the impaired status of Humboldt Bay (dioxin listed as one of the stressors), concern exists regarding the potential for additional nutrient loading down stream of the assessment area. However, no use of chemicals is proposed or mandated by this THP. Herbicide application is not necessary in the future to suppress non-conifer species.

## 1. Watershed Resources (Cont.)

7.  Yes  No Increase peak flow effect?

Increase in the peak flow effect may have occurred after logging operations in the past. Operations that consisted of removing large blocks of trees and vegetation with no retention for WLPZs may have resulted in adverse affects due to the elimination of watercourse filter strips. The removal of vegetation can affect the interception of rainfall and the rate of percolation into the ground water table. Variables that influence peak flows include the amount of forested canopy present, type of soils present, the intensity and duration of storm events, and soil saturation. Past harvesting of the old-growth forest had no limitations on the amount or timing of forest canopy removal in the watershed. As far as the RPF knows, no data exists about peak flows during this past period of harvest, but based on current knowledge of fluvial systems it could be assumed that the early harvest of large forested areas may have affected peak flows within the WAA.

No significant increases in peak flows are expected due to the silviculture proposed in this THP. Summer base flows may increase slightly due to the removal of trees as part of this timber harvesting operation, but will likely be minimal due to the selective nature of the harvesting. If summer base flows do increase, then streams that do not support mid-summer flow may sustain surface flow for a longer period of time into summer, and this could have a positive effect on non-fish aquatic organisms in Class II watercourses. Winter peak flows should not be significantly affected by timber harvest. Evapotranspiration is less significant during the winter when soils are saturated and peak flows occur. Any peak flow effects will decrease as the site becomes vegetated. The effects are most likely to occur within the first 5 years after harvest. During that time a vegetative ground cover of conifers, natural shrubs and ferns, natural annual and perennial grasses, and other herbaceous plants will become established that will reduce these effects. Studies done at Jackson State forest showed no significant increases in peak winter storm flows in a watershed where 65% of the forest canopy was removed across the watershed. (Wright and others 1990).

### D. Sediment Yield, which could Embed Gravels, Fill Pools, or Aggrade Channels.

1.  Yes  No Increases in stream sedimentation from in-unit erosion?

Numerous studies (Dodge *et al.*, 1976; Rice and Datzman, 1981; McCashion and Rice, 1983; Peters and Litwin, 1983) have concluded that most erosion occurring on timber harvesting sites are primarily due to large mass wasting events located on a small fraction of the harvest areas. The extent of surface erosion (degree of detachability) is dependent upon the soil type, slope gradient, vegetative cover, degree of ground disturbance and rainfall intensity and duration. However, even in the presence of surface erosion (dry ravel, rain drop impact, sheet wash and rilling), the amount of eroded sediment that may be delivered to stream channels is strongly dependent upon the distance to the nearest watercourse and the condition of the vegetative buffer between the stream channel and the harvest area. Studies have shown that unaltered drainages and adequately dispersed surface runoff result in low long-term sediment production. Furthermore, vegetative buffers around the harvest areas (WLPZs and ELZs) are generally capable of filtering out the majority of eroded sediment. The majority of management related sediment is attributed to roads and tractor roads. (McCashion and Rice, 1983; Rice and Lewis, 1982; Reid, 1981)

The use of an existing skid and truck road system shall minimize the amount of in-unit erosion that could potentially occur within the majority of the THP area. Given the width of the WLPZs and ELZs, in-unit erosion on skid trails and bare mineral soil is not expected to reach downstream watercourses. This is attributed to the anticipation of the correct placement of waterbreaks on skid trails prior to the completion of operations, and the amount of residual conifers and hardwoods and logging slash and debris that will be capable of trapping overland transported sediment. The use of WLPZ facilities such as skid road and truck roads shall be mitigated such that no significant sedimentation occurs.

2.  Yes  No Stream sedimentation resulting from in-unit erosion from within WLPZs

Modern forest practice rules have limited the amount of harvest from within the WLPZ and have increased slope stabilization measures, thus lowering the potential for any resulting ground disturbance. No measurable in-unit erosion from within the WLPZ is expected to occur as a result of this THP. All practices proposed within the THP area that may produce erodible surfaces within the WLPZs have been mitigated through measures detailed in Section II. Furthermore, this THP proposes mitigation that shall offset this existing erosion by re-directing surface runoff on seasonal roads to locations where the runoff can be adequately filtered through undisturbed vegetation, organic matter and duff.

## 1. Watershed Resources (Cont.)

The THP proposes the use of an existing skid trail within the outer margins of a WLPZ and the use of an existing landing as a construction staging area for two stream crossings which also occurs within a WLPZ. Both of these practices have been designed to mitigate any potential sediment delivery and provide an opportunity to correct ongoing drainage issues occurring at these sites.

3.  Yes  No Stream sedimentation resulting from surface erosion on THP and appurtenant roads.

This THP proposes the re-use of seasonal truck roads. Following operations, there will naturally be an increase in surface erosion on all roads used. However, with proper waterbreak placement and subsequent road maintenance, no significant increases in direct stream sedimentation are expected. Portions of roads that occur within a WLPZ shall be treated as described in Item 18, which states that the traveled surface of logging roads shall be treated to prevent waterborne transport of sediment and concentration of runoff that results from timber operations. Treatment may consist of, but not limited to, rockering, outsloping, rolling dips, cross drains, waterbars, slope stabilization measures, or other practices appropriate to site-specific conditions. Additional mitigation measures associated with the removal of Humboldt crossings, crossing abandonment, and road surface drainage improvements are expected to help offset any minor increases in sedimentation resulting from road use.

### E. Openings Created By Project Activities along Stream Channels That Could Result In Substantially Increased Stream Temperatures.

Although water temperature does not appear to be a significant concern within the planning watershed due to high canopy closures, concerns exist due to the presence of downstream Salmonids. Based upon observations made during THP layout and review of more recent aerial photos, canopy cover within the forested portions of the planning watershed is relatively high and homogeneous with no temperature effects known to exist. Lower reaches of most watercourses are "day lighted" and/or travel through urban subdivisions. Summer stream temperature monitoring occurring in Gannon Slough indicates that temperatures within Gannon Slough and Beith Creek are marginal for coho.

This THP is not expected to significantly increase stream temperatures within the watershed. This conclusion is based upon the Watercourse Protection Measures contained within the THP and the proposed silvicultural prescription. Class II and III watercourses shall have a riparian buffer of conifers and hardwoods well in excess of the minimum required by the FPRs. Since this THP proposes timber harvesting of individual trees scattered throughout the plan area, no increases can be reasonably expected.

### F. Increased Amounts of Small Organic Debris in Streams or Lakes As A Result Of Project Activities.

No practices are proposed that could reasonably result in significant introductions of small organic debris into the planning watershed. Accidental deposition of slash or debris into watercourses shall be removed immediately per forest practice rules.

### G. Inputs or Extraction of Large Organic Debris from Streams or Lakes As A Result Of Project Activities.

No removal of large woody debris is allowed within the WLPZ of Class II watercourse or Channel Zone per Section II, Item 26. Future large woody debris shall be recruited through overstory retention occurring within the WLPZ.

### H. Discussion of Potential Impacts to Fish and Fishery Resources.

This THP shall protect fish and their habitat from significant adverse impacts as follows:

- Water temperature effects and thermal loading to fishery resources are not expected to occur because of watercourse protection measures contained within the THP and the small acreage of WLPZ contained within the boundaries of the THP.
- Spawning and rearing habitat are not expected to be impacted by sediment loading because erosion is not expected to enter the planning watershed in an appreciable amount. The treatment of active erosion sites within the THP and the hydrologic disconnection of roads from watercourse may have a potential positive impact on downstream fishery resources.

## 1. Watershed Resources (Cont.)

- Riparian vegetation will not be affected because operations will not negatively impact near-water vegetation or canopy cover within the WLPZ. Trees marked within WLPZs are generally on the outer margins, or are proposed to be fell away from stream channels, reducing the amount of disturbance to riparian vegetation.
- This THP shall protect near-stream large woody debris by prohibiting the removal of any downed woody debris from within the WLPZ.
- Road related erosion and sedimentation shall be reduced in the long-term following operations as a result of improvements in appurtenant road drainage and the installation of up-graded drainage facilities on appurtenant stream crossings.

## 2. Soil Productivity

Existing Condition: Soil productivity is affected by the loss of organic soil nutrients, topsoil displacement, compaction and loss of growing space to new road construction. The potential for these impacts is mostly related to activities within the THP area. Past activities in the CIAA that affected soil productivity were related to old-growth logging, and the construction of truck roads, skid roads, and landings. Most unused sites, such as skid roads and landings have revegetated and are capable of growing commercial conifers again but will have a reduction in soil productivity until the organic layer redevelops from litter layer and microbial decomposition. Construction of the current truck road system led to reduction of soil productivity for those acres affected by the road construction. Initially a larger area is cleared than the actual finished grade. Over time the disturbed soil outside of the traveled surface of the road revegetated and became a productive timber-growing site. Crowns of adjacent trees later grew over the road recapturing some of the original growing space.

### A. Surface Soil Loss

The potential for erosion following logging is largely a function of the area of exposed mineral soil. Given the tractor yarding method proposed, there will undoubtedly be loss of surface soil. However, surface soil loss will be minimized by utilizing existing skid roads to the greatest extent feasible, and installing waterbreaks for the purpose of minimizing erosion of the surface soil. In areas where slopes are greater than 65%, tractors have been restricted to designated skid trails which are existing, flagged and shown on the THP maps. Areas of exposed soil within the WLPZ/ELZ shall be treated as stated in Item 18 in Section II, which will protect the downslope beneficial uses of water from sedimentation effects. Site preparation is not proposed.

### B. Organic Matter Loss

Organic matter loss can cause a decrease in site productivity due to loss of support for critical soil microbial activity and diminished capability of the soil to store moisture in a form readily available to both plants and soil microorganisms. Organic matter displacement can cause localized or micro-site impacts on soil productivity within a THP area, but this impact is effectively mitigated by limits placed on the use of ground skidding equipment by the Forest Practice Rules and this THP. Organic matter loss can cause loss of nutrients contained in the topsoil and biomass associated with the harvest area. Organic matter loss is primarily from erosion and volatilization. The potential loss from fire is associated with wildfire and not normally from controlled burns. Nutrient loss from fire is primarily related to high intensity burns, which are not proposed as part of this THP. Most of the biomass nutrients are contained in the topsoil and foliage of the existing vegetation, and to a large extent will not be impacted.

Given the tractor yarding method, there will naturally be some loss and displacement of organic matter. However, the use of existing skid roads shall minimize this loss and displacement. The erosion of organic matter will be minimized by the proper placement of waterbreaks on truck and tractor roads. The proposed operation will not remove the entire overstory canopy, and there will continue to be nutrient sources available post harvest. No long-term significant adverse impacts to soil productivity in regards to the loss of organic material are expected as a result of this operation.

### C. Down Woody Debris

The THP area presently has high moderate levels of downed woody debris (DWD) outside of the WLPZs. The majority of this DWD is non-merchantable, however merchantable downed woody debris may be removed from within the THP boundaries outside the WLPZ, while non-merchantable DWD shall be retained. This practice of removing minor portions of the DWD, while retaining the majority will ensure no significant impacts occur.

## 2. Soil Productivity (Cont.)

### D. Soil Compaction

Soil compaction can affect site productivity through the loss of the ability of the soil to transmit air and water and by restricting root penetration. Significant compaction usually occurs when soil moisture conditions are high enough to facilitate soil plasticity. Soil compaction will be minimized by only operating heavy equipment during dry, rainless periods when the soils are not saturated, thus mitigating the potential for significant compaction to occur. This THP proposes no timber operations within the Winter Period. As stated above, this THP will utilize a largely intact skid trail network and very little new trail, if any, will be constructed. In areas where slopes are 65% or greater, tractors are limited to designated trails. Following operations, the compacted areas consisting of skid trails will re-vegetate overtime, and bulk density will slowly decrease by biotic and microbiotic activities and the rooting action of new successional vegetation.

### E. Loss of Growing Space

Growing space loss is most affected by the construction of new roads and landings that take timberland out of production. While it is necessary to have roads, their construction should be kept to a minimum and their locations designed to minimize impacts. For this THP, one new landing will be constructed, which will require substantial excavation. This excavation is largely a result of its geographical location, as opposed to its size, and the new landing will not be larger than  $\frac{1}{4}$  acre. The construction of the landing is not considered significant loss. The old skid road system will be re-used to the greatest extent feasible with no significant amount of new skid road construction anticipated. No significant loss of growing space is expected as a result of this THP.

## 3. Biological Resources

### A. General Background and Discussion

The biological assessment area (BAA) is used to analyze and consider possible effects on all terrestrial species mainly in relation to forest seral stage distribution. Within the WAA different criteria (water temperature and sediment) are used to determine possible impacts to aquatic species that require either moist areas, or continuous flowing water. Cumulative effects to species under the WAA are linked to watershed assessment considerations. As such, concerns for these species are addressed in the watershed assessment. This habitat assessment has only examined the terrestrial features of the area. Amphibians, by definition use both aquatic and terrestrial habitats. Therefore, this group of species was addressed in both assessments in relation to the terrestrial or aquatic components of their habitat.

Past activities in the BAA that affected biological resources were related to unregulated past logging operations, including truck road and skid road construction, and urban development. Large contiguous blocks of forest were harvested including the riparian zones along watercourses. Roads were constructed across and adjacent to watercourses resulting in deposition of organic debris and sediment. These activities had a temporary impact on biological resources by reduction in available habitat and potentially increasing water temperatures. These post logging conditions no longer exist in the CIAA. Clearcut areas regenerated to dense stands of conifer and hardwood providing shade to watercourses. Stream channels have significantly cleaned out from decades of winter rains and periodic flood events. Some snags and wildlife habitat trees were retained after the old-growth operations because they had no merchantable value. The city of Arcata, its surrounding communities and the agricultural bottom lands may have had a more permanent effect on biological resources considering the amounts of timberland conversion and the alteration of major streams within the BAA.

### B. Wildlife Species of Concern and Listed Species, which overlap the BAA

Rare, endangered, or threatened species and species of special concern which may occur within the BAA, and which may be affected by timber operations have been assessed in Section III, Addendum 32, and the provisions for wildlife protection were discussed in Section II, Addendum 32. Based upon database inquiries and known locations of sensitive species, the proposed project, as mitigated, is not expected to significantly impact any known sensitive species that occur within the BAA.

### 3. Biological Resources (Cont.)

#### C. Aquatic and Near-water Habitat Conditions within BAA

1.  Yes  No Loss of pool and riffle habitat

Pool and riffle habitat while lacking in the THP area, exists throughout BAA. However, this habitat type is not expected to be impacted from timber operations such that pools are filled and riffles are destroyed. Watercourse protection measures listed in the THP are expected to protect these watercourses. In addition, remediation of active erosion control sites located within the THP is expected to lower sediment rates entering the watershed.

2.  Yes  No Loss of downed woody debris

Large Woody Debris occurs throughout the BAA. This habitat type is not expected to be impacted by the proposed operation. Downed woody debris shall be retained within all WLPZs and Channel Zones. Furthermore, future down woody debris shall be recruited from within the WLPZ and the entire THP area through retention measures for watercourses as stated in Section II, Item 26 and the silvicultural prescription of this THP.

3.  Yes  No Loss of near-water vegetation

All THP watercourses contain dense streamside vegetation consisting of conifers, red alder, and brush species. Operations conducted under this THP shall not result in a significant loss of near-water vegetation. The watercourse protection measures stated in Item 26 of Section II prohibit heavy equipment operations that could damage or otherwise destroy near-water plants and understory vegetation. No operations are proposed that could reasonably result in a significant loss of near-water vegetation.

#### D. Biological Habitat Features and Conditions within the BAA

1.  Yes  No Loss of late successional forests

This habitat type does not exist within the THP or biological assessment area. No net loss of this habitat type shall occur as a result of this THP.

2.  Yes  No Loss of snags

Snags are an important wildlife habitat component for cavity nesting species and are a distinctive characteristic of old-growth forests. Studies done in the Blue Mountains of Oregon and Washington show that snags are the primary location for cavities that are used by 63 species of vertebrates, 39 birds, and 24 mammals. Uses include sites for nesting and overwintering, locations for courtship rituals and food sources (Franklin et al Ecological Characteristics of Old-Growth Douglas-Fir Forests, USDA Forest Service, PNW Range and Experiment Station, General Technical Report PNW-118, 1981).

Past management practices have included the routine felling of snags for worker safety and fire prevention. The subsequent reduction in the number of large snags available for wildlife use has become a concern to some. Within the BAA, snags exist but are not abundant, which has to do with management practices of the past, but may also be due to relatively young age of the conifers when prairie in-growth is accounted for. This THP proposes to retain all snags within the plan area, except those which must be felled for safety concerns or if required by the rules. No significant loss of snags is expected as a result of this THP.

3.  Yes  No Loss of downed woody debris

The THP area contains moderate levels of downed woody debris outside of riparian areas. Relative to the conditions observed in the THP area, the BAA contains similar concentrations of DWD in the younger stands and larger concentrations in the older stands. No significant net loss of downed woody debris is expected from operations because of the scarcity of merchantable downed woody debris (recent blow down) proposed to be removed. Downed woody debris shall be retained within the THP area (as per Item 26 and 38) and no significant loss of downed woody debris is expected.

### 3. Biological Resources (Cont.)

4.  Yes  No Loss of multi-layered canopy or vertical structure

This habitat type exists sparingly throughout the THP and BAA because the majority of the forest stands are even-aged. However, uneven-aged stand structure exists alongside the watercourses within the BAA and within recently harvested units in nearby NTMPs. This THP will not result in a net loss of vertical structure because the pre-harvest and post-harvest stands will essentially remain even-aged and no uneven-aged stands are proposed for harvest. Overtime, the selection areas will slowly start resembling semi-evenaged stands as a new age class develops in the understory.

5.  Yes  No Loss of hardwoods

Hardwoods are a natural component throughout the BAA and THP. The THP's hardwood component consists of red alder within the WLPZs. The existing hardwood component is subordinate to the conifer stands that dominate the plan area and BAA. Hardwoods are proposed for harvest concurrent with conifers species, however, they will still be represented post-harvest. All hardwoods shall be retained in this THPs WLPZ. No significant reduction of hardwoods is expected to occur as a result of this THP.

6.  Yes  No Increased road density

The road density within the BAA is moderate to high. Most of the roads within the BAA are associated with urban and rural residences. In the forested portions of the BAA, numerous access roads associated with forest management exist. Existing seasonal roads will be re-used, and no new truck roads are proposed. Prior to completion of operations, skid trails and landings will be drained accordingly and will naturally revegetate with time.

### 4. Recreational Resources

The assessment area consists of the THP area and the appurtenant road network. The THP area occurs on a private rural ownership which does not permit public access. Portions of the appurtenant road occur on lands owned by the City of Arcata. These lands are part of the recently acquired Sunny Brae tract and while no official public access is currently open, it is evident that recreational activities have and will occur within these lands. Evidence of recent hiking and mountain biking are evident on the access road proposed under this THP. Trespass issues within private ownerships with mountain biking are a concern to many local residences along Fickle Hill, and access to the road network may be occurring from many locations including the City's property. While biking and trespass can not be feasibly controlled under this THP, the use of the proposed roads are not expected to impact any future planned recreational plans for the City's forest.

### 5. Visual Resources

The operation will not be visible to a significant number of people who are no further than three miles from the timber operations. The timber operation will be visible from a small portion of Fickle Hill Road and portions of the Humboldt Bay area. Due to the selection silviculture proposed any visual impacts are considered minimal. Visual resources are expected to improve for the landowner as various view sheds are opened up near their home site and along the roads.

### 6. Vehicular Traffic Impacts

The traffic assessment area for the THP includes private roads controlled by the listed timberland owners. Public roads used to haul forest products will include Fickle Hill Road, Union Street, Samoa Blvd, and HWY 101. All of these public roads have been used historically and frequently for the transportation of wood products with no known past or existing traffic, safety, or maintenance problems. There will be no significant effects on vehicular traffic as a result of this THP. The proposed project should not create any significant cumulative impacts to vehicular traffic within the assessment area.

### 7. Noise Impacts

The noise assessment area consists of the areas within one mile of the THP boundary, including private roads controlled by the timberland owners. Fickle Hill Road is a major county road in which large trucks frequently travel to access various communities along Fickle Hill and beyond. Log hauling and the operation of other trucks such as dump trucks or lowboys are not expected significantly increase noise levels within the assessment area. This conclusion is based on the relatively small size of the THP, and the low amounts of log truck traffic expected from the THP (1-3 loads per day). Timber falling and yarding operations while not uncommon within the assessment area, have a higher potential of elevating noise within the assessment area, primarily within  $\frac{1}{2}$  a mile of the THP area. Several residences are located along the northern boundary of the THP. Potential noise impacts to nearby residential areas are mitigated by restrictions on daily timing of timber operations and the restriction of certain timber operations on Federal holidays. With the application of the mitigations detailed in Section II, Item 38 of the THP, the proposed project should create any significant cumulative impacts to noise within the assessment area.

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**SECTION V**  
**ADDITIONAL INFORMATION**

I. SOIL FACTORS:				A = Tractor Areas					
				B = Cable-Longline Areas					
A. SOIL TEXTURE	FINE	MEDIUM	COARSE	A	B				
1. DETACHABILITY Rating	<u>Low</u> 1-9	<u>Moderate</u> 10-18	<u>High</u> 19-30	12	12				
2. PERMEABILITY Rating	<u>Slow</u> 5-4	<u>Moderate</u> 3-2	<u>Rapid</u> 1	3	3				

B. DEPTH TO RESTRICTIVE LAYER OF BEDROCK

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

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

Rating	<u>Low</u> (-) 10-39	<u>Moderate</u> 40-70%	<u>High</u> 71-100%	6	6			FACTOR RATING BY AREA
	10-6	5-3	2-1					A B
SUBTOTAL =>							25	25

II. SLOPE FACTOR

Slope Rating	5-15%	16-30%	31-40%	41-50%	51-70%	71-80% +		
	1-3	4-6	7-10	11-15	16-25	26-35	9	22

III. PROTECTIVE VEGETATIVE COVER REMAINING AFTER DISTURBANCE

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

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

Rating	Low	Moderate	High	Extreme			
	(-) 30-39	40-59	60-69	70-80 (+)			
	1-3	4-7	8-11	12-15	9	9	
TOTAL SUM OF FACTORS =>					50	63	

EROSION HAZARD RATING

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



Reference: 008142

October 8, 2008

Mr. Nick Robinson  
Timberland Resources Consultants  
165 South Fortuna Blvd., Suite 4  
Fortuna, CA 95540

**Subject: Geologic Evaluation of Site-Specific Areas within the Schmidbauer Timber Harvesting Plan, Humboldt County**

## Introduction

This report presents the results of a geologic evaluation of a number of slide areas and road points within the Schmidbauer Timber Harvest Plan (THP) conducted by SHN Consulting Engineers & Geologists, Inc. (SHN). The intent of this report is to document our geologic consultation on this project. Ultimately, our investigation and subsequent proposed mitigations are meant to minimize the potential impacts proposed land use activities could have on local water quality as it pertains to landslide-derived sediment.

During the layout of this timber harvest plan, Mr. Nick Robinson observed several areas that exhibited geomorphic and vegetative irregularities attributable to recent and/or historic landslide activity. Subsequent to his assessment, Mr. Robinson concluded it would be prudent to obtain a geologic consultation as to whether any of features he identified as potential slide areas should be considered unstable, and if the management activities proposed on or adjacent to them was appropriate.

Our investigation consequently focused around those regions that the project forester identified as being potentially unstable. We conducted a field reconnaissance of these pre-identified areas in July 2008. During our site visit, we discussed the silviculture and harvest methods proposed in the immediate vicinity of the mapped landslides with Mr. Robinson. Subsequent to our evaluation of the potential areas of concern Mr. Robinson requested that we assess several road segments that had been altered by landslide processes.

This evaluation was conducted in general conformance with the work scope outlined in California Geological Survey (CGS) Note 45 (1999), "Guidelines for Engineering Geologic Reports for Timber Harvesting Plans," but as a focused investigation addressing specific issues. As such, our study is inherently focused on documenting condition at the pre-identified sites, qualitatively evaluating slope stability conditions in these areas, and assessing the potential for sediment delivery to watercourses as a result of landslide processes.

The scope of our investigation included a review of pertinent and available regional geologic maps and literature, analysis of four sets of stereographic aerial photographs, a focused site reconnaissance, and preparation of this report containing our observations and conclusions. In our

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**Geologic Evaluation of Site-Specific Areas within the Schmidbauer Timber Harvesting Plan,  
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report, we use the landslide terminology presented in CGS Note 50 (1997) and in Cruden and Varnes (1996). Landslide age classes used herein are based on the scheme presented in Keaton and DeGraff (1996).

## **Site and Plan Description**

The Schmidbauer THP encompasses approximately 26 acres in portions of Section 34, Township 6 South, Range 1 West of the U.S. Geological Survey Arcata North 7.5-minute quadrangle (Figure 1). This single unit THP occupies roughly southwest-facing hillslope near the headwaters of Grotzman Creek watershed. Several unnamed Class II and III tributaries to Grotzman Creek are mapped within the limits of this harvest plan. Grotzman Creek is a roughly southwest-flowing watercourse that drains beneath the Sunnybrae neighborhood, eventually draining into Humboldt Bay.

Most of the areas currently proposed for harvesting operations have gradients of less than 45%; although, there are some steep (greater than 65%) hillslopes included within the plan area. The gentler slopes typically have rolling, convex profiles with local topographic benches intermixed, while the steeper areas tend to have planar to concave expressions. A majority of the watercourses within the plan area flow down shallow, under-developed channels that are often confined to broad poorly expressed moderate gradient topographic depressions. The larger Class II watercourses are affiliated with more traditional, moderately steep-sided, roughly v-shaped draws.

Stands in the studied portions of the THP vary from site to site, but are typically characterized by moderately dense, single-tiered stands of hardwood and conifer. Conifers constitute a significant portion, if not a majority, of the stands enveloped by this harvest plan. The conifer component of these stands is dominated by redwood with lesser amounts of fir and spruce. Intermixed with the conifer are scattered, as well as clustered groups of hardwood (principally red alder). Where present, the sub-canopy element of these stands is dominated by sapling redwood, fir, and alder. Underlying the overstory and sub-canopy is a variably thick shrub layer composed of sword fern, evergreen huckleberry, and other associated ground cover species. These groundcover species often occur in dense patches and can obscure the ground surface.

## **Regional Geology**

### **Bedrock Conditions**

Published geologic maps of the region indicate that the portion of the Grotzman Creek drainage basin occupied by this THP is underlain by the mélange component of the Jurassic to Cretaceous age Central belt of the Franciscan Complex and the early to middle Pleistocene age Falor Formation (Kelly, 1984; Figure 1). The Central belt consists of a tectonic mélange composed of penetratively sheared, metamorphosed (pumpellyite grade) argillite matrix. This matrix envelops rootless blocks of hard bedrock that range from feet to miles in maximum dimension. These blocks of material consist of coherent and folded sequences of metamorphosed sandstone and shale, as well as exotic lithologies such as glaucophane schist, eclogite, and other high-grade metamorphic rocks.

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# GEOLOGY AND GEOMORPHIC FEATURES RELATED TO LANDSLIDING ARCATA SOUTH 7.5' QUADRANGLE, HUMBOLDT COUNTY, CALIFORNIA

Compiled by

Frederic R. Kelley, Geologist  
California Department of Conservation  
Division of Mines and Geology

1984

## EXPLANATION

 TRANSLATIONAL/ROTATIONAL SLIDE: relatively cohesive slide mass with a failure plane that is deep-seated in comparison to that of a debris slide of similar scale; sense of motion along slide plane is linear in a translational slide and arcuate or "rotational" in a rotational slide; complex variations with rotational heads and translational movement or earthflows downslope are common; translational movement along a planar joint or bedding discontinuity may be referred to as a block glide;  indicates scarp,  indicates direction of movement; dashed where dormant, queried where uncertain.

 EARTHFLOW: mass movement resulting from slow to rapid flowage of saturated soil and debris in a semi-viscous, highly plastic state; after initial failure, the flow may move, or creep, seasonally in response to destabilizing forces;  indicates scarp,  indicates direction of movement; dashed where dormant.

 DEBRIS SLIDE: unconsolidated rock, colluvium, and soil that has moved slowly to rapidly downslope along a relatively steep (generally greater than 65 percent), shallow translational failure plane; forms steep, unvegetated scars in the head region and irregular hummocky deposits (when present) in the toe region; scars likely to re-erode and remain unvegetated for many years; re-vegetated scars recognized by steep, even-faceted slope and light-bulb shape; includes scarp and slide deposits; solid where active, dashed where dormant.

 DEBRIS SLIDE SLOPES: geomorphic feature characterized by steep (generally greater than 65 percent), usually well vegetated slopes that have been sculpted by numerous debris slide events; vegetated soils and colluvium above shallow soil/bedrock interface may be disrupted by active debris slides or bedrock exposed by former debris sliding; slopes near angle of repose may be relatively stable except where weak bedding planes and extensive bedrock joints and fractures parallel slope.

\* ACTIVE SLIDES: too small to delineate at this scale.

 DISRUPTED GROUND: irregular ground surface caused by complex landsliding processes resulting in features that are indistinguishable or too small to delineate individually at this scale; also may include areas affected by down-slope creep, expansive soils, and/or gulley erosion; boundaries usually are indistinct.

 STREAM CHANNEL DEPOSITS (Holocene): unconsolidated silt, sand, and pebble- to cobble-sized gravel in active river channel and flood-stage, gravel bar areas.

 ALLUVIUM (Holocene): unconsolidated, coarse- to fine-grained sand and silt on coastal plain, in valley bottoms and along modern river flood plains; minor amounts of gravel in channel areas.

 RIVER TERRACE DEPOSITS (Holocene-Pleistocene): dominantly sand and gravel with minor amounts of silt and clay deposited during higher stands of major streams.

 MARINE TERRACE DEPOSITS (Quaternary): poorly to moderately consolidated marine silts, sands, and gravels forming flat benches on wave-cut surfaces.

 HOOKTON FORMATION (Pleistocene): predominantly orange-brown, non-marine sandstone with some clay and gravel; sandstone usually is medium-grained, well sorted, and poorly cemented; includes the  beds of well rounded pebbles of chert, quartz, and some greenstone ranging from 4 to 16 millimeters in size; in some exposures, cobbles up to 100 millimeters are present.

 OLD FALOK FORMATION (Early to Middle Pleistocene): fluvial and shallow-water marine sediments; includes pebble- to cobble-sized conglomerate, sandstone, and silt.

 OTW WILDCAT CROOK UNDIFFERENTIATED (Pleistocene-Miocene): mudstone, shale, sandstone, siltstone, and minor amounts of conglomerate.

 YAGER FORMATION (Tertiary): well consolidated silty shale, siltstone, sandstone, mudstone, and conglomerate; highly sheared in places; silty shale and mudstone often disaggregates by shaking when wetted.

 K/MS CENTRAL BELT FRANCISCAN SEDIMENTARY ROCKS (Cretaceous-Jurassic): well consolidated sandstone, siltstone, and shale with minor amounts of conglomerate; structurally deformed and usually highly sheared; includes areas mapped as Franciscan Broken Formation by Carter and others (1984).

 FM FRANCISCAN RELANGE (Cretaceous-Jurassic): individual blocks of graywacke, sandstone, mudstone, conglomerate, greenstone, chert, and serpentinite in a sheared argillaceous matrix.

 LITHOLOGIC CONTACT: dashed where approximately located, queried where uncertain.

 FAULT: dashed where approximately located, dotted where projected or concealed, queried where uncertain.

 TERRIST FAULT: dashed where approximately located, dotted where projected, queried where uncertain; barbs on upper plate.

 LINEMENT: linear feature of unknown origin observed on aerial photographs.

 STRIKE AND DIP OF BEDDING: approximate; may vary over short distances.

 QUARRY OR BORROW PIT

 SPRING

 MARSH

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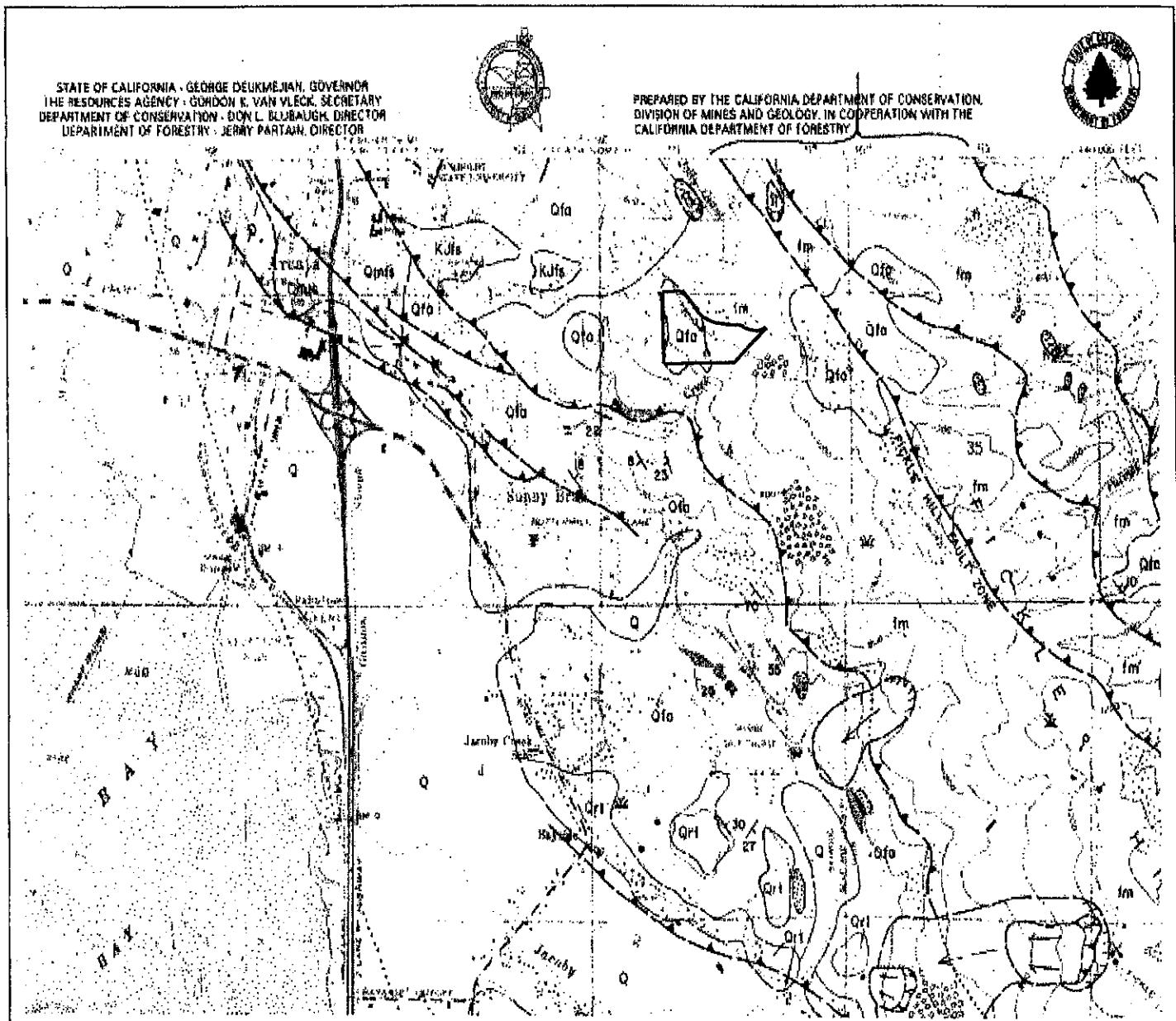
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RESOURCE MANAGEMENT

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& Geologists, Inc.

Schmidbauer THP  
Arcata, CA

Explanation  
Geologic & Geomorphic Map  
Spittler, 1992  
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Not to Scale

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Schmidbauer THP  
Arcata, CA

Geologic & Geomorphic Map  
Spittler, 1992  
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Mr. Nick Robinson

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Falor Formation sediments are described as fluvial and shallow water marine sediments, comprised of pebbly conglomerate, sandstone, and siltstone (Kelley, 1984). Conglomerates are usually well-cemented and set in a matrix of fine-grain sandstone. Conglomerates occur in thin lenses or in beds as much as 50 feet thick (Manning and Ogle, 1950). Falor Formation sandstone is typically fine grained, well-sorted, and moderately indurated. Interbedded with the sandstone and conglomerate are thin lenses of clay that often grade into fine siltstone. Only locally (where plant remains are abundant) do these fine grain sediments become shaly (Manning and Ogle, 1950). This formation is commonly considered equivalent in age to the Carlotta Formation in the upper section of the Wildcat Group.

Our review of the site confirmed that the plan area is underlain by both Central Belt and Falor Formation sediments. In the field, slopes underlain by Central Belt bedrock are mantled with an aggregate rich colluvium supported by a silt and clay rich matrix. Most of the clasts we observed were angular to subangular, fine- to medium-grained, gravel- to cobble-sized sandstone (greywacke). We also noted a small component of angular, gravel-sized siltstone and mudstone clasts in localized areas. Sandstone specimens require one or more solid blows by a geologic hammer to fracture; whereas, the siltstone and mudstone specimens fracture easily with a single blow.

Falor Formation sediment consisted predominantly of fine- to medium-grained silty to clayey sandstone. Exposures we observed were massive at outcrop scale. Consistency of these sediments varied from site to site, although it was universally friable. At most sites, the sandstone could be easily scratched with a knife.

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**Seismic Conditions**

The project area is located between two traces of the Fickle Hill fault (Figure 1). Clearly ~~these are~~ the most significant tectonic features associated with this plan. There are, however, a number of other faults in the region that could produce strong seismic ground shaking. For reference, the North Coast Region of California is the most seismically active region of the continental United States. More than 60 earthquakes have produced discernible damage in the region since the mid-1800s. Historic seismic and paleoseismic studies in the area suggest there are six distinct sources of damaging earthquakes in the region: (1) the Gorda Plate; (2) the Mendocino Fault; (3) the Mendocino Triple Junction; (4) the northern end of the San Andreas Fault; (5) faults within the North American Plate (including the Mad River and Little Salmon faults zones); and (6) the Cascadia Subduction Zone.

The Fickle Hill fault, which is a northwest-trending, northeast-dipping thrust fault, is part of the larger Mad River fault zone. The Mad River fault zone consists of a series of northwest-trending faults that intersect the coast between Arcata and Big Lagoon to the north. The faults offset late Pleistocene age marine terraces along the coast and extend some 25 to 30 miles inland. Anticlines developed along the leading edges of the over-riding thrust sheets form prominent ridges, the largest of which forms Fickle Hill. Portions of the Mad River fault zone, including parts of the Fickle Hill fault, are considered active by the State of California under the Alquist-Priolo

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Earthquake Fault Zoning Act. Recurrence intervals for earthquakes generated on faults within the Mad River fault zone are poorly constrained, but available data suggests repeat times on the order of 3,000 to 5,000 years or more.

That segment of the Fickle Hill fault that dissects slopes below the THP is not considered "active" under the Alquist-Priolo Earthquake Fault Zoning Act (Hart and Bryant, 1997). This distinction is probably more of a result of the lack of youthful deposits along the upland portions of the fault trace with which to assess fault activity, rather than any change in fault character. Consequently, it would still be prudent to consider this segment of the Fickle Hill fault a potential seismic source. Based on currently available fault parameters, the maximum magnitude earthquake for this fault is thought to be around 6.9 (CDMG/USGS, 1996).

## **Slide Areas of Concern**

This section of the report provides a brief description of each of the landslides and landslide-related landforms encounter during this investigation.

**G1:** This point corresponds to an approximately ¼-acre area of irregular and broken ground that appears to have experienced movement historically (Figure 1). The surface of this moderate gradient slope has a muted surface expression and is truncated along its southern margin by a 4- to 6-foot high, arcuate (map view) pitch in slope. A back-tilted old growth stump with deformed sucker growth is present at the foot of the pitch.

A densely vegetated legacy roadway appears to have undercut the southeastern margin of the area of concern. Short segments of the roadway's cut bank have experienced minor slumps, some of which may have delivered sediment to a gully that runs down the centerline of the roadway. However the running surface of the roadway does appear intact and was not modified by erosional processes.

**G2:** This point corresponds to an approximately ¼-acre area of disrupted ground. Conditions in this region are similar (irregular and broken) to those observed at G1. The site does have several slight warped conifers on its surface. However, in general, the slide morphology in this area is less well expressed and can be difficult to delineate. There is no indication that the slope is actively contributing sediment to the Class III watercourse that abuts its eastern margin.

**G3:** This point corresponds to an approximately 500-foot-long, recently active debris flow complex. The land owner has constructed a retaining wall across its crown to impede its headward migration. It does appear that the slide transported debris down to the right bank of Grotzman Creek.

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**G4:** This point corresponds to a debris flow that initiated in the face of a sidecasted fill slope. The body of this 200-foot-long, 50-foot-wide slide supports a patch of young alder. A small Class III watercourse now drains the upper 1/3 of the slide scar. It does appear that this event contributed sediment to the downslope watercourse.

### **Proposed Land Use Activities**

Approximately 26 acres of forested ground are designated for timber operations under this THP. Timber stands within operational limits of this plan will be subjected to group selection silvicultural practices. Group selection is an uneven age type management that involves both group openings and partial cut activities. Under the California Forest Practice Rules (CFPR), group openings proposed under a group selection cannot exceed 2.5 acres in size and must incorporate less than 20% of the harvestable area. It is our understanding that this project has only a limited number of small group clearings, which range from 0.25 to 2.5 acres in size.

Stands outside the open areas will be managed in accordance with prescriptions for the single-tree selection harvest method. Single-tree selection requires that a minimum of 75 square feet (sq. ft.) of conifer basal area be retained on Site II ground. This stocking standard must be met immediately upon the completion of operations. Pre-harvest conifer stocking in the single-tree selection areas is approximately 318 sq. ft. per acre (see Vegetation and Stand Conditions section in the harvest plan).

No site preparation is proposed (mechanical or burning). Regeneration shall be artificial the first winter following operations. Cable and ground-based yarding techniques will be employed for the removal of felled timber.

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### **Impact Discussion**

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Harvesting operations proposed under this THP could result in the removal of timber from slopes adjacent to or within the landslides at G1 through G4. Because vegetation retention areas have been found to be an effective management strategy for minimizing the harvesting impact, operations in the areas of concern will be restricted to single-tree selection (see "Recommendations" section). Although this level of entry will diminish local interception, evaporation, and transpiration rates, as well as lower soil shear strength values (root decay), it should not significantly influence stability of the managed slides or those slopes adjacent to them.

Several of the assessed failures support sparse stands of timber; therefore, we anticipate that little to no harvesting operations will occur on or adjacent to them. Areas that support ample amounts of conifer could experience a reduction of up to 30%. There is a low probability that this level of harvest (0% to 30%) will adversely affect the hydrologic regime of the mapped landslides. Timber and shrubbery remaining at the completion of operations will continue to extract moisture from the soil column as well as provide canopy coverage.

The loss of interception properties, due to canopy reduction, will be partially compensated in the short term by the presence of slash and woody debris produced during falling operations. It is our

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understanding that felled trees will be limbed prior to yarding activities and that no site preparation (burning) will occur. These management activities could result in the build-up of between 3 and 12 inches of slash. This variably thick veneer of woody debris should partially make up for the decrease in interception as well as reduce post-harvest evaporation rates.

Because a large percentage of trees to be removed from within and around the slide areas are redwoods, we do not expect a substantial loss in soil strength properties in response to logging operations. Because redwood is prone to coppice growth (sprout), it is reasonable to assume that the redwood stumps will regenerate and maintain a significant percentage of their existing root network subsequent to harvest. Even though the biomass of a redwood root system does decline subsequent to harvesting, it does not decrease to zero as with non-sprouting species. Studies indicate that second growth redwood stumps lose up to 40% of their biomass before their stump sprouts become established (Ziemer and Lewis, 1984). Although some root die off will occur subsequent to logging operations, those remaining root masses that trigger sprouting will continue to provide effective cohesion to the surrounding material. Due to the regenerative nature of redwood, we anticipate that not only will significant portions of the biomass be retained, but that the slopes will also be rapidly reoccupied by third growth timber.

Based on the retention of groundcover, hardwoods, and a large percentage of the existing conifers, exclusion of site preparation and ground based equipment, in conjunction with the regeneration processes associated with second-growth redwood, we conclude that reducing the stand density in and around the areas of instability identified on Figure 2 has a low probability of resulting in an increased rate of ground movement or the delivery of landslide-derived sediment into local watercourses.

### **Recommendations**

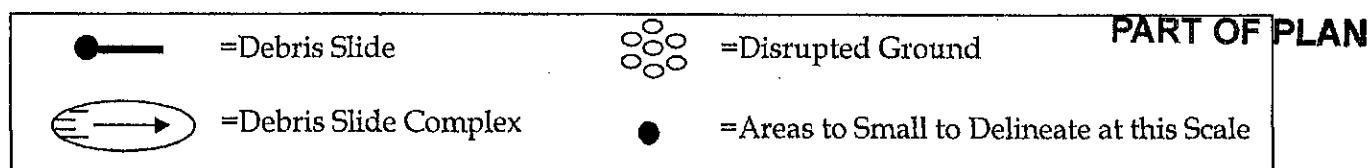
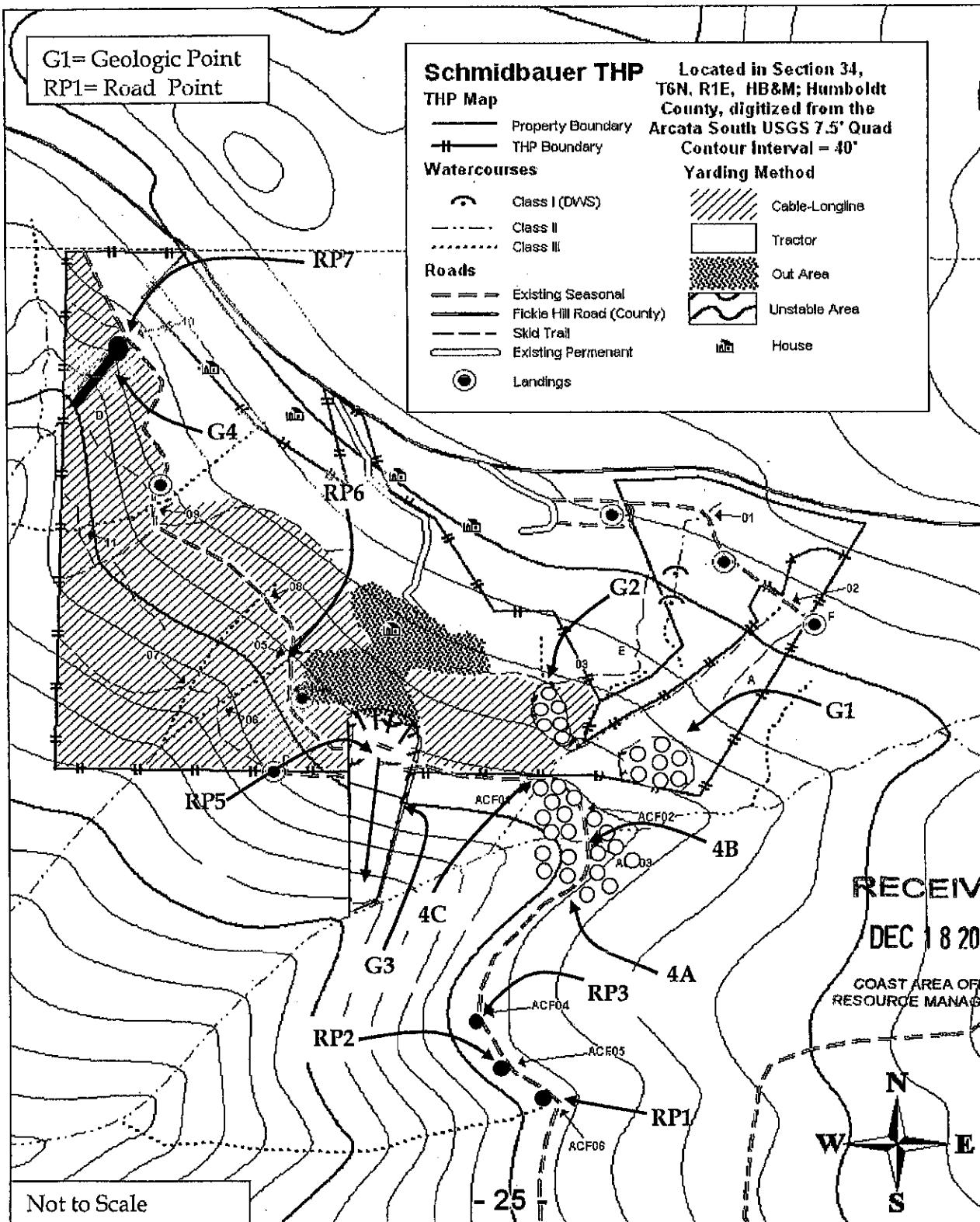
- Establish an Equipment Limitation Zone (ELZ) around the area of disrupted ground at G1 as discussed in the field. Operations within the ELZ should be limited to single-tree selection.
- No group selection opening should be established on slopes within 50 feet of the lateral margins of the area of disrupted ground at G2 due to the nearby watercourse.
- No group selection opening should be established on slopes within 50 feet of the lateral margins of the debris slide at G3.
- No group selection opening should be established on slopes within 50 feet of the lateral margins of the debris slide at G4. Group openings should be setback a minimum of 75 feet from the crown of the failure.
- Single-tree selection should be applied to those stands of timber that occupy the surfaces of the landslides at G2 through G4. Operations within the recommended setbacks should also be restricted to single-tree selection.

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## Conclusion

Logging operations, as presently proposed under the Schmidbauer THP, have a low probability of accelerating mass wasting activity within or adjacent to the areas of concern identified in this report, assuming that our recommendations are incorporated into the plan. Partial cut silvicultural methods will be implemented on those slopes identified as being unstable. The restrictive practices proposed on these slopes will result in the retention of a variably thick assemblage of conifers, hardwoods, and shrubs following the completion of operations.

Timber and shrubbery remaining in the partial cut areas will continue to provide canopy coverage, root strength, and transpiration and interception mechanisms. Even though stabilizing effects provided by canopy coverage and root strength will decrease as a result of harvesting operations, the loss should be minor, and in our professional opinion, have a low probability of increasing the rate of landsliding and/or sedimentation to down-slope watercourses. Decreasing stand densities in the reviewed areas that fall within the THP have a low probability of aggravating existing slope stability conditions.

Consequently, based on the level of harvest proposed on and adjacent to unstable areas, the proposed logging methods on steep slopes (cable), and the absence of site preparation in the single-tree selection areas, and the regenerative properties of second growth redwood, we conclude that the logging activities proposed under the Schmidbauer THP should not have a negative impact on the stability of those areas of concern reviewed during this investigation.

## Road Points

### Descriptions and Recommendations

Subsequent to our landslide assessment the project forester requested that we evaluate several road failures present along the apparent road system. The purpose of this investigation was to review the impacted segments and to formulate recommendations (as necessary) that would minimize the influx of landslide-derived sediment to local watercourses as a result of the proposed grading activities. A brief description of these impacted segments and the corresponding repair options follows.

**RP1:** This point corresponds to an approximately 60-foot segment of road that has been narrowed due to ground movement below its outboard edge. Movement along the face of a marginally unstable streamside slope has reduced road widths by triggering minor events in the fill slope. At the time of our investigation, the travelway above the displaced fill slope was in excess of 12 feet in width. The project forester is proposing to reopen this section of road for hauling purposes.

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To discourage increased rates of erosion and/or triggering a renewal of ground movement at this location in response to proposed road work, we recommend the following:

- Retreat the roadway into the existing cut bank (as necessary) to gain additional width above the fill failure. Do not enhance the road surface by drifting material over the failed fill slope.
- Spoils produced during these activities should be end hauled to a suitable storage site as designated by the project forester. Organic-free spoils can be incorporated into the surfaces of existing full bench roadways.
- Minimize the road width above the marginally stable fill slope to the greatest extent that safety allows.
- Outslope that section of the re-graded road surface that parallels the fill slope. Establish water breaks such that they do not direct overland flow onto the fill slope.

**RP2:** This point corresponds to a 30-foot long section of road that has been altered by a fill slope failure. A recent debris flow has removed more than 5 feet of the outer edge of the roadway. The project forester is proposing to reopen this section of road for hauling purposes. To discourage increased rates of erosion and/or triggering a renewal of ground movement at this location in response to proposed road work, we recommend the following:

- Retreat the roadway into the existing cut bank (as necessary) to gain additional width above the slide area. Do not enhance the road surface by drifting material over the crown of the slide scar.
- Spoils produced during these activities should be end hauled to a suitable storage site as designated by the Project Forester. Organic-free spoils can be incorporated into the surfaces of existing full bench roadways.
- Outslope that section of the re-graded road surface that parallels the crown of the fill slope failure. Establish water breaks such that they do not direct overland flow onto slide scar.

**RP3:** This point corresponds to a 40-foot road segment that has been horizontally displaced by as much as 2 feet, due to ground movement in the underlying substrate. At the time of our investigation, the travelway above the distressed section of road was in excess of 12 feet in width. The project forester is proposing to reopen this section of road for hauling purposes. To discourage a renewal of ground movement at this location in response to proposed road work, we recommend the following:

- Do not backfill the displaced road surface; instead, ramp into and out of the down-dropped segment.
- Construct the ramps by grading through the lateral flanks of the displaced surface. Do not create the ramps by placing fill onto the down dropped surface.

**OR**

- Retreat the roadway into the existing cut bank (as necessary) to gain additional width above the distressed road segment.

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**OR**

- Reconstruct the roadway using a combination of both above mentioned options.

**AND**

- Spoils produced during the implementation of any option should be end-hauled to a suitable storage site as designated by the Project Forester. Organic-free spoils can be incorporated into the surfaces of existing full bench roadways.

**RP4A to RP4C:** This section of roadway crosses a marginally unstable slope that appears to be predisposed to slow, deep-seated ground movements (that is, earthflow processes). In general, the road segment between RP4A and RP4B is no longer recognizable. Between RP4B and RP4C, the legacy roadway is more apparent and at times, is in excellent condition. Neither of the watercourse crossings associated with this road segment are presently passable. The project forester is proposing to reopen this road segment for hauling and landing purposes. The stretch of road between RP4A and RP4B will require reconstruction, as will both of the crossings.

Slope gradients in those areas that will likely be subject to grading operations for the re-establishment of the roadway vary from 5% to 25%. Our site inspection suggests that minimal amounts of filling or cutting will be required for the re-establishment of the road. We anticipate that fill slopes/cut banks along the new road segments will be less than 4 feet in height.

A bridge is proposed at RP4B, to discourage in-channel disturbance. The crossing at RP4C will consist of the installation of a culvert. Both crossings will be temporary. At the completion of operations, fill slopes employed for bridge abutments will be removed and spread over full bench road surfaces, while the culvert at RP4C will be replaced with a rock armored channel. To discourage increased rates of erosion and/or trigger a significant mass movement in response to proposed road work, we recommend the following:

- Minimize road widths to the greatest extent that safety allows.
- Occupy existing road/trail surfaces when and where feasible.
- As discussed in the field, the road segment between RP4B and RP4C should be established at the upper elevation.
- Balanced cut-and-fill building techniques should be employed, as conditions allow, between RP4A and RP4B.

**RP5:** This point corresponds to a 150-foot stretch of road that has been buried and/or displaced by the slide associated with G2. Slope gradients along the impacted road segment range from 10% to 45%. Several 2- to 4-foot high scarps dissect slopes near the eastern margin of the slide area. The project forester is proposing to reconstruct this section of road for hauling purposes. He is also proposing to establish a spur road connection. The relief across that portion of the slide proposed for earthwork is fairly minimal; therefore, we anticipate cut banks to be less than 3 feet in height.

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Field observations do suggest that construction of the upper roadway will require the build up of a 4- to 6-foot thick through-fill. To discourage increased rates of erosion and/or triggering a renewal of ground movement in response to proposed road work, we recommend the following:

- As site conditions and proposed road grades will allow, employ building techniques that make use of fill materials for reconstructing the proposed roadway. Minimize excavation to the greatest extent feasible.
- Do not construct keyways for the placement of fill materials on slopes within the body of the landslide.
- Remove fill materials that overlap onto the body of the slide at the completion of operations. Excavation spoils should be end-hauled to a suitable storage site as designated by the project forester or feathered across full-bench road surfaces.
- Re-establish natural surface water pathways on the surface of the slide subsequent to the removal of fill.
- Cover graded slopes with slash.
- If the new roadway must over winter, install drainage facilities that will allow the passage of water under and/or across the fill slopes. Do not allow damming, ponding, or the diversion of surface water to occur upslope of fill areas. Natural surface water pathways must be maintained throughout the winter period.

**RP6:** This point corresponds to a cut bank seep. The spring is not associated with an area of instability. The project forester is proposing to reopen this section of road for hauling purposes. To discourage increased rates of erosion at this location in response to proposed operations, we recommend the following:

- If water is present at the time of operations, install a temporary crossing with an artificial capture basin composed of an earthen berm. Do not construct a capture basin by excavating into the existing cut bank.
- At the completion of operations or if water is not present, construct a rock ford of durable angular rock ranging from approximately 2 to 6 inches in diameter.

**RP7:** This point corresponds to a 30-foot long section of road that has been altered by the fill slope failure associated with L3. The debris flow removed more than 3.5 feet of the outer edge of the roadway. The project forester is proposing to reopen this section of road for hauling purposes. To discourage increased rates of erosion and/or triggering a renewal of ground movement at this location in response to proposed road work, we recommend the following:

- Retreat the roadway into the existing cut bank (as necessary) to gain additional width above the slide area. Do not enhance the road surface by drifting material over the crown of the slide scar.
- Spoils produced during these activities should be end-hauled to a suitable storage site as designated by the project forester. Organic-free spoils can be incorporated into the surfaces of existing full-bench roadways.

**\* CALFAS NOTE: Per direction from geologist (see the file) this is "G4" RECEIVED 4/14/09**  
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- Outslope that section of the re-graded road surface that parallels the crown of the fill slope failure. Establish water breaks such that they do not direct overland flow onto the slide scar.
- Pull back fill materials positioned along the crown of the slide. Excavations should extend a minimum of 3 feet beyond the head of the slide.
- Re-grade the graded slope face such that it matches adjacent hillside configurations.
- Blanket exposed soils with grass seed and straw/woody debris. Sound woody debris that ranges from 1 to 6 inches in diameter can be employed for erosion control.

## **Conclusions**

We believe that the road segments we inspected can be reopened without significant environmental impact. If the review road segments are re-opened in compliance with our recommendations and state standards, we conclude that there is a low probability that reoccupation of these road surfaces will have a significant impact on slope stability or on the rate of sedimentation to downslope watercourses.

## **Limitations**

The interpretations and conclusions presented in this report are based on a study of inherently limited scope. The intent of this investigation is to assist timber professionals in the interpretation of geologic and geomorphic features and processes, and to identify active and potential mass wasting areas within the proposed THP areas.

Our conclusions are based on the interpretation of available maps, photos, and literature, and on our field reconnaissance. Subsurface investigations and slope stability modeling are beyond the scope of this investigation. Our field interpretations of problematic hillslopes are typically based on the nature and distribution of existing mass wasting features. In the absence of such features, we generally assume stable conditions, but we cannot preclude that failures will develop in the future.

The recommendations provided in the field are intended to *minimize* the level of risk associated with the identified geologic hazards. We can make no assurances, however, that the hillslopes will not be subject to localized failures after logging. Because we cannot predict the timing of large earthquakes or periods of intense, prolonged rainfall, it is impossible to determine how hillslopes in the amendment area will respond in the future.

Our conclusions and interpretations are based on the conditions at the time of our work. We cannot preclude that changes may occur in the future that could alter site conditions. This is especially true in Humboldt County, which is located in a dynamic geologic environment that is subject to large scale, catastrophic events (such as, great earthquakes, large storms, and so on). Lastly, this report applies only to the sites described above. Because of the high degree of variability in geology in this region, it is not possible to extrapolate the results described herein to any other site.

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This report is to be considered in its entirety and no part, section, paragraph, sentence, or phrase is to be quoted, evaluated, or otherwise used without considering its context and relationship to the entire report.

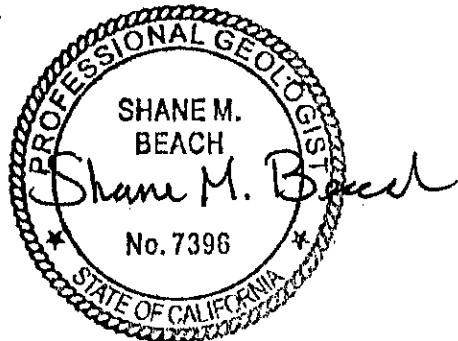
We trust that this report provides the information required for the Schmidbauer THP. If you have any questions, please call me at 707/441-8855.

Respectfully,

**SHN Consulting Engineers & Geologists, Inc.**

Shane M. Beach, R. G. 7396  
Project Geologist

SMB:lms  
Attachments: 2 Figures



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Erosion Control Plan for Schmidbauer THP

*Submitted to:*

California Regional Water Quality Control Board  
North Coast Region  
5550 Skylane Boulevard, Suite A  
Santa Rosa, California 95403

*Prepared by:*

Chris Carroll, RPF #2628  
Timberland Resource Consultants  
165 South Fortuna Blvd  
Fortuna, CA 95540

November 4, 2008

## Purpose

This Erosion Control Plan (ECP) has been prepared on behalf of the property owner by agreement and in response to the California Water Code Section 13260(a), which requires that any person discharging waste or proposing to discharge waste within any region that could affect the quality of the waters of the state, other than into a community sewer system, shall file with the appropriate regional board a report of waste discharge (ROWD) containing such information and data as may be required by the Regional Board. Order No. R1-2004-0030 specifically states that technical reports required under the General Waste Discharge Requirements include an Erosion Control Plan (ECP).

## Scope of Report

The RWQCB's Guidance Document for Order No. R1-2004-0030 states that an Erosion Control Plan (ECP) shall contain the following:

1. An inventory of all controllable sediment discharge sources within the Project area, and,
2. A time schedule for implementation of prevention and minimization management measures from all controllable sediment discharge sources within the Project area. The implementation of prevention and minimization management measures must be completed during the period of coverage under General WDRs.

Controllable sediment discharge sources means sites or locations, both existing and those created by proposed timber harvest activities, within the Project area that meet all the following conditions:

1. is discharging or has the potential to discharge sediment to waters of the state in violation of applicable water quality requirements or other provisions of these General WDRs,
2. was caused or affected by human activity, and
3. may feasibly and reasonably respond to prevention and minimization management measures.

## Methods

The methods used to develop this ECP include both field and office components. The office work included review of nearby approved THPs, the review of Geologic and Soil-Vegetation Maps for the area, and the review of aerial photography of the property for which the THP is located on. The field component consisted of a survey of controllable sediment discharge sources located throughout the entire THP area, including the appurtenant road system. This included on-site evaluations of the following: truck roads, skid roads, watercourse crossings, watercourse channels and banks, landings, unstable areas, and hillslopes adjacent to all watercourses that could potentially contribute sediment.

Controllable sediment discharge sources are defined as physical locations on the ground where existing erosion is occurring, or could potentially occur without proper mitigation. Erosion sites that do not threaten water quality, primarily because they do not have the potential to deliver eroded sediment to stream channels, were not individually identified. Upon completion of office research and field surveys, controllable sediment discharge sources had been identified, evaluated, and prescribed treatments based on existing conditions and recommendations resulting from the review process with the timing of treatments correlated to the area of operations during the life of the THP.

This THP contains three (3) specific ECP points. However general road use was considered as a potential source of erosion. This includes hauling and other timber operation related activities along the appurtenant road system, as well as landing use and construction, road construction and reconstruction, and skid trails. All such practices shall adhere to the specifications detailed in Section II of the THP and by doing such shall mitigate any potential impacts to a level of non-significance.

## Erosion Control Plan

**Table 1. WDR Erosion Control Plan (ECP) data form.**

Site	Problem Type	Activity Level (H,M,L)	Land Use (Y,N)	Treat (Y,N)	Current Estimated Erosion Volume (yds <sup>3</sup> )	Future Delivery Without Treatment (yds <sup>3</sup> )	Treat Priority (H,M,L)	Treatment Type
1	Class I (DWS) Crossing	L	Y	Y	<5	<5	L	See below
2	Road Drainage	L	Y	Y	<1	<1	L	See below
3	Class III Crossing	L	Y	Y	<1	<1	L	Temporary crossing
4	Cut Bank Seep	M	Y	Y	<1	<1	L	See below
5	Class III Crossing	M	Y	Y	<1	<1	L	Maintain existing facility
6	Class III Crossing	L	Y	Y	<1	<1	L	Temporary crossing
7	Class III Crossing	L	Y	Y	<5	<2	L	Temporary crossing
8	Class III Crossing	L	Y	Y	<1	<1	L	Install rock ford
9	Class III Crossing	M	Y	Y	<5	<5	L	See below
10	Fill Slope Failure	L	Y	Y	<1	<1	L	See below
11	Class III Crossing	L	Y	Y	<2	<6	L	Temporary crossing
ACF01	Class II Crossing	M	Y	Y	<5	<5	L	Install rock ford
ACF02	Landing	L	Y	Y	<1	<1	L	See below
ACF03	Class II Crossing	M	Y	Y	<5	<5	L	Install bridge
ACF04	Fill Slope Failure	L	Y	Y	<1	<1	L	See below
ACF05	Fill Slope Failure	L	Y	Y	<1	<1	L	See below
ACF06	Fill Slope Failure	L	Y	Y	<1	<1	L	See below
MOR01	Fill Slope Failure	L	Y	Y	<1	<1	L	See below
MOR02	Class III Crossing	L	Y	Y	<1	<1	L	Temporary crossing
MOR03	Road Drainage	L	Y	Y	<1	<1	L	Prescribed rolling dip

**Guide to ECP Table Headings**

**Site:** Identified controllable sediment discharge sources as located on the THP Map.

**Problem Type:** Description of the controllable sediment discharge source. The "Stream Crossing" type are existing controllable sediment discharge sources associated with truck road watercourse crossings that are currently delivering sediment.

**Activity Level:** The rate of activity at the site. (H) would indicate an extremely active site with high amounts of sediment delivery. (M) would indicate an active site with a moderate amount of sediment delivery. (L) would indicate a site that has low, or the potential for low, amounts of sediment delivery.

**Land Use:** Identification that the site has resulted from human activity. (Y) meaning Yes, and (N) meaning No.

**Treat:** Identification as to whether the site will be treated. (Y) meaning Yes, and (N) meaning No.

**Current Estimated Erosion Volumes:** An estimate, in cubic yards, of the amount of sediment delivery from the site. Estimates are based on visual observations.

**Future Delivery Without Treatment:** An estimate, in cubic yards, of the amount of sediment the site may deliver without treatment.

**Treat Priority:** The time frame for treatment of the site. (H) would indicate a high priority with treatment being planned to occur upon approval of the THP during the 1<sup>st</sup> season of operations prior the start of the winter period (Nov. 15). (M) would indicate a moderate priority with treatment being planned to occur within a year of THP approval, or prior to the winter period (Nov. 15) of the 2<sup>nd</sup> season of operations. (L) would indicate a low priority with treatment being planned to occur any time prior to the expiration of the THP outside the winter period (Nov. 15 – Apr. 1).

## Erosion Control Plan (Cont.)

THP Map Points (as shown on the Appurtenant Road Map) - Underlined crossings are 1611 notification points:

1. Temporary Class I crossing on existing seasonal truck road. A fill crossing exists at this location now. The head of a Class I (DWS) spring is located just above the crossing. The temporary culvert shall be a minimum of 6 inches and shall be long enough that backfill cannot reach the inlet or outlet of the pipe. Additionally, the LTO shall place 2-3 hay bales in the channel below the outlet of the culvert to act as a siltation control measure. The LTO shall monitor this site periodically and replace the bales when needed. The LTO shall remove crossing in accordance with "Watercourse Crossing Removal" specifications below following the completion of hauling on this segment of road or prior to the start of the Winter period, which ever occurs first. Following the removal of the crossing, the LTO shall install Drain Rock in-line with the channel from the head of the crossing down to the break in slope below the crossing. This measure is proposed to address potential down cutting.
2. Existing seasonal road above a Class III watercourse. At this location the LTO shall maintain the existing dip (location flagged in the field). No sidecasting shall occur with the ELZ. Prior to the winter period this segment of road shall be treated per Section II, Item 18, Number 3 to the nearest waterbreak on either side of the dip.
3. Temporary Class III crossing on existing skid trail. Prior to the winter period following use of the crossing, remove crossing in accordance with "Watercourse Crossing Removal" specifications below.
4. Cut bank seep on existing seasonal truck road. This location shall be drained by either outsloping the road or by waterbars. If water is present during operations a culvert may be installed to direct water across road and eliminate saturated soil conditions. The LTO shall take care to ensure that drainage from the seep can not deliver to the Class III watercourse to the north (Map Point 5). If saturated soil conditions persist following the grading and draining of the road, rock may need to be applied to maintain a stable operating surface.
5. Permanent Class III crossing on existing seasonal truck road. A 12" CMP is installed at this location. This crossing drains a small Class III watercourse and the drainage from a residential tennis court (which is located to the east of the crossing) via a 6" CMP welded to the inlet of the pipe. The outlet has a large downspout which ends with a coupled "T" pipe energy dissipater. The LTO shall ensure the inlet is free and clear of all debris prior to the start of the Winter Period.
6. Temporary Class III crossing on existing skid trail. The LTO shall maintain the existing channel configuration by placing hay bales and/or compacted slash into the channel prior to use. Fill may be backfilled over this material. Prior to the start of the Winter Period the LTO shall remove all material from the channel. Additionally, the LTO shall take care to minimize excavation of the toe of the cutbank on the west approach of the crossing to the greatest extent feasible (area between Points 6 and 7).
7. Temporary Class III crossing on existing skid trail. This watercourse has been diverted by the trail and has created a gully for approximately 150 feet to where it blows out at a fill slope failure. Prior to the Winter Period the LTO shall dip out the crossing to eliminate any future diversion potential. The fill slope of the trail shall be dug down in-line with the channel and lined with rock. Additionally, three large waterbars shall be installed between the crossing and the blow out to break up the drainage of the trail.

## Erosion Control Plan (Cont.)

8. Class III crossing on existing seasonal truck road. A Class III watercourse drains off a large cutbank before draining across the road onto steep slopes. Due to the steepness of the cutbank a Rock Ford is proposed at this location. Prior to the start of the Winter Period, a rock ford shall be installed at this location in accordance with the "Rock Ford Specifications" stated below.
  9. Class III crossing on existing seasonal truck road. Large amounts of dirt have been piled in this location, likely moved from the old log landing to the west and from an old skid trail that once switched back in the channel of the Class III (immediately below the truck road crossing). Currently the channel has settled into the western side of the material before crossing the road, at which point it has down cut into the fill material of the road and old skid trail creating large gullies that lead into the channel. It is not feasible to restore the channel to its original position mainly due to the immense amount of excavation required to do so. It appears that most of the unstable fill has eroded away and the down cutting has slowed in recent years.
- Prior to the start of the winter period, the LTO shall rock the entire basin (of the road prism), filling in the gully with rock to establish the inboard running surface. Beginning 10' to the west of the channel and continuing 50' to the east of the channel. This practice will minimize disturbance and armor the road prism from future erosion.
10. Fill slope failure on existing seasonal truck road. A diversion from a swale to the northwest of the crossing is discharging onto the failure and is likely the cause of the failure, which has resulted in a debris slide. To facilitate hauling the LTO shall retreat into the existing cut bunk to the minimum extent necessary for hauling. The re-graded section of road shall be outsloped and waterbreaks shall be established that direct overland flow away from the failed fill slope. The LTO shall not drift any material over the failed fill slope. Organic-free spoils may be incorporated in the surfaces of existing full bench roadways. Any other spoils produced shall be end hauled to a location outside of a WLPZ or ELZ and stabilized as per Item 18. Perched material along the crown of the slide shall be removed extending a minimum of 3 feet beyond the head of the slide. Waterbreaks shall be established before the failure on the northwestern approach. Additionally the LTO shall install a large dip at the outlet of the swale to capture all drainage from the swale and direct it across the road.
  11. Temporary Class III crossing on existing skid trail. A Humboldt crossing is currently installed at this location. Prior to the completion of operations the LTO shall remove this crossing in accordance with the "Watercourse Crossing Removal Specification" below. Following removal, the approaches to the crossing shall be treated with packed slash.

The following Map Points occur on the Arcata Community Forest:

- ACF01: Temporary Class II crossing on existing seasonal truck road. A temporary culvert of no less than 18" in diameter shall be used for the crossing. Prior to the start of the Winter Period, a Rock Ford shall be installed at this location in accordance with the "Rock Ford Specifications" stated under Item 26.
- ACF02: Existing landing between Map Points ACF01 and ACF03. Portions of this landing occur within a Class II WLPZ. No log landing shall occur at this location. The LTO shall be permitted to operate equipment within this area to facilitate the construction of Map Points ACF01 and ACF03. This landing shall be used to minimum extent feasible to facilitate the proposed operations. Rock needed for the construction of the Rock Ford may be stockpiled in this location prior to installation of the ford. Additionally, it is proposed to stockpile spoils generated from the construction of the bridge approach to Map Point ACF03. This material shall be placed on the uphill side of the landing in the wedge outside of the WLPZ (as flagged in the field) and stabilized as per Item 18.

## Erosion Control Plan (Cont.)

All areas of exposed bare mineral soil, including road surfaces, shall be considered within a WLPZ for the purpose of determining timing and treatment of soil stabilization measures described in Item 18. For clarity, the areas requiring such treatment are all areas between ACF01 and ACF03.

ACF03: Temporary Class II crossing on existing seasonal truck road. It appears as if a Humboldt crossing was once located here though most of the material has since washed out from the crossing. The banks appear to have stabilized though portions of the old road prism can be seen on the southern approach. It is proposed to cross this watercourse with a minimum 54 foot rail car temporary bridge. The northern approach shall be realigned to the west of the crossing following portions of an existing skid road grade as flagged in the field.

Abutment locations have been flagged in the field. Beginning approximately 30 feet back from the northern abutment location, the LTO shall lay back the slope to achieve a favorable road grade leading to the bridge. This will require the slope to be cut down approximately 4-6 feet in depth. This shall be achieved with an excavator on the break in slope above the crossing and the material shall be placed upslope of the creek's floodplain on the existing terrace where spoils have been traditionally stockpiled (Map Point ACF02). During reconstruction, no fill material shall be placed, pushed or side-casted into the direction of, or into the watercourse.

The northern abutment shall be compacted dirt, utilizing the existing bench as flagged in the field. A few logs shall be placed below the abutment to prevent it from sinking. The southern abutment shall be constructed of logs built up from the existing bench as flagged in the field.

The bridge is designed to remain installed for the life of the THP. At the completion of operations the abutments shall be removed and the approaches stabilized as per item 18. The through-cut portion of the newly aligned northern approach shall be treated with compacted slash, with a waterbar at the break in slope directing drainage away from the approach. See diagram on page 45.

Alternatively, the bridge may be installed as a permanent crossing. If the permanent crossing alternative is chosen, the north and south abutments shall be constructed of concrete blocks in the same relative positions the temporary abutments are proposed. Additionally, the treatment for the through-cut portion of the northern approach shall be rock instead of packed slash. If this option is chosen, it shall be reflected in the approved 1611 with DFG.

For the roadway between ACF01 – ACF03 the following shall apply during the reconstruction of the road: road widths shall be minimized to the greatest extent feasible to facilitate hauling. The existing road surfaces shall be used for reconstruction when and where feasible. Balanced cut-and-fill building techniques shall be employed as conditions allow.

ACF04: Fill slope failure on existing seasonal truck road. Approximately 40 feet of road has been horizontally displaced by as much as 2 feet. At this location the LTO shall ramp into and out of the down-dropped segment. The ramps shall be constructed by grading through the lateral flanks of the displaced surface. No fill shall be placed on the dropped down surface and the displaced portion of road shall not be backfilled. Alternatively, the LTO may retreat the road way into the existing cut bank to the minimum extent necessary for hauling. Organic-free spoils may be incorporated in the surfaces of existing full bench roadways. Any other spoils produced shall be end hauled to a location outside of a WLPZ or ELZ and stabilized as per Item 18.

## Erosion Control Plan (Cont.)

- ACF05: Fill slope failure on existing seasonal truck road. Approximately 30 feet of road has been altered by a recent debris slide which has removed 5 feet of the outer edge of the roadway. To facilitate hauling the LTO shall retreat into the existing cut bunk to the minimum extent necessary for hauling. The re-graded section of road shall be outsloped and waterbreaks shall be established that direct overland flow away from the failed fill slope. The LTO shall not drift any material over the failed fill slope. Organic-free spoils may be incorporated in the surfaces of existing full bench roadways. Any other spoils produced shall be end hauled to a location outside of a WLPZ or ELZ and stabilized as per Item 18.
- ACF06: Fill slope failure on existing seasonal truck road. Approximately 60 feet of road has been narrowed due to movement below the outboard edge of the road. To facilitate hauling the LTO shall retreat into the existing cut bunk to the minimum extent necessary for hauling. The re-graded section of road shall be outsloped and waterbreaks shall be established that direct overland flow away from the failed fill slope. The LTO shall not drift any material over the failed fill slope. Organic-free spoils may be incorporated in the surfaces of existing full bench roadways. Any other spoils produced shall be end hauled to a location outside of a WLPZ or ELZ and stabilized as per Item 18.

The following Map Points occur on the Morris property:

- MOR01: Fill slope failure on existing seasonal truck road. Approximately 50 feet of road has been narrowed due to the slippage of fill material below the outboard edge of the road. To facilitate hauling the LTO shall retreat into the existing cut bunk to the minimum extent necessary for hauling. The re-graded section of road shall be outsloped and waterbreaks shall be established that direct overland flow away from the failed fill slope. The LTO shall not drift any material over the failed fill slope. Organic-free spoils may be incorporated in the surfaces of existing full bench roadways. Any other spoils produced shall be end hauled to a location outside of a WLPZ or ELZ and stabilized as per Item 18.
- MOR02: Temporary Class III crossing on existing seasonal truck road. Prior to the Winter Period following use of the crossing, remove crossing in accordance with "Watercourse Crossing Removal" specifications below.
- MOR03: Prescribed rolling dip on existing seasonal truck road. At this location the LTO shall install a rolling dip prior to the Winter Period of sufficient depth to ensure that overland flow will remain in the swale and not diverted down the road.

Watercourse Crossing Removal:

1. Fills shall be excavated to form a channel that is as close as feasible to the natural watercourse grade and orientation and is wider than the natural channel.
2. The excavated material and any resulting cut bank shall be sloped back from the channel and stabilized to prevent slumping and to minimize soil erosion as described in Section II, Item 18. Channel side slopes shall not exceed 2:1, unless adjacent natural slopes are steeper.
3. All bare mineral soil located on approaches to truck and tractor road watercourse crossings up the edge of the WLPZ or the nearest drainage facility, whichever is farthest, shall be treated per Section II, Item 18.

## Erosion Control Plan (Cont.)

### Rock Ford Specifications:

1. The truck road shall dip into and out of the rock ford to minimize diversion potential.
2. The crossing shall be constructed with clean, native rock that is large enough to remain in place during peak flows. Rock size shall vary relative to the size of the watercourse.
3. The crossing's inlet and outlet shall be rock armored to resist downcutting and erosion.
4. The entire width of the crossing's approaches shall be rock armored to a minimum of 6-feet from the watercourse transition line at either side of the crossing.
5. If the crossing is expected to carry water any time during the course of operations a minimum 6-inch temporary pipe shall be installed. Following operations, the temporary culvert and any non-rock fill shall be removed and the rock ford shall be constructed as described above.

## Implementation of Erosion Control Measures

### General Provisions

1. All erosion control measures shall be implemented by the LTO in association with the proposed THP.
2. Implementation of erosion control measures shall occur concurrent with timber operations, in accordance with the time schedule indicated above.
3. Implementation of erosion control measures shall cease, at any time of the year, when saturated soil conditions exist within the yarding area.

### Prioritization of Implementation of Erosion Control Measures

Once operations have begun in any particular area within the THP, the prescribed erosion control measures shall occur by the start of the winter period for that given operating season unless otherwise stated.

## Inspection Plan

The Inspection Plan shall be designed to ensure that all required management measures are installed and functioning prior to rain events, that the management measures were effective in controlling sediment discharge sources throughout the winter period, and that no new controllable sediment discharge sources developed. The Inspection Plan shall include a narrative discussion of the program to inspect and maintain all identified management measures throughout the duration of the Project. A site map that depicts the inspection locations to be visited before, during, and after the winter period shall be included in the Inspection Plan.

Inspections conducted prior to the winter period shall be designed to assure that management measures are properly installed and maintained; winter period inspections should be designed to assure and assess management measure performance and determine if new controllable sediment discharge sources developed; post-winter period inspections should be designed to assure that the management measures have functioned adequately and whether any new controllable sediment discharge sources have developed. Management measures shall be evaluated for adequacy and proper implementation and whether additional management measures are required in accordance with the terms of this Order.

## Site Inspections

Qualified professionals shall conduct all specified inspections of the Project site to identify areas causing or contributing to a violation of applicable water quality requirements or other provisions of these General WDRs. The name and contact number of the assigned inspection personnel has been listed in the Inspection Plan. The following inspection requirements shall begin once the startup of timber harvest activities begin within Project areas.

1. Project areas where timber harvest activities have not yet commenced, no inspections are required.
2. Project areas where timber harvest activities have commenced and no winter period timber harvest activities have occurred, at a minimum, conduct inspections each year and throughout the duration of the Project while timber harvest activities occur and the Project is covered under General WDRs as follows:
  - a. By November 15 to assure Project areas are secure for the winter; and
  - b. Once following ten (10) inches of cumulative rainfall commencing on November 15 and prior to March 1, as worker safety and access allows; and
  - c. After April 1 and before June 15 to assess the effectiveness of management measures designed to address controllable sediment discharges and to determine if any new controllable sediment discharge sources have developed.
3. Project areas with timber harvest activities during the winter period shall, at a minimum, conduct inspections of such Project areas while timber harvest activities occur and the Project is covered under General WDRs as follows:
  - a. Immediately following the cessation of winter period timber harvest activities to assure areas with winter timber harvest activities are secure for the winter;
  - b. Once following ten (10) inches of cumulative rainfall commencing on November 15 and prior to March 1, as worker safety and access allows; and
  - c. After April 1 and before June 15 to assess the effectiveness of management measures designed to address controllable sediment discharges and to determine if any new controllable sediment discharge sources have developed.
4. Inspection reports shall identify where management measures have been ineffective and when the Discharger will implement repairs or design changes to correct management measure failures.
5. If any new controllable sediment discharge sources are identified, such sites shall be addressed as described below in Inspection Plan Reporting Requirements.
6. Equipment, materials, and workers shall be available for rapid response to failures and emergencies, and implement, as feasible, emergency management measures depending upon field conditions and worker safety for access.

## Inspection Plan Reporting Requirements

For inspections where violations of the General WDRs are not discovered, the Discharger shall submit a summary report to the Executive Officer by June 30th for each year of coverage under these General WDRs or upon termination of coverage. The summary report shall at a minimum include the date of each inspection, the inspector's name, the location of each inspection, and the title and name of the person submitting the summary report.

## Inspection Plan Reporting Requirements (Cont.)

If during any inspection or during the course of conducting timber harvest activities, a violation of the General WDRs is discovered, the provisions of section III.B.3. shall be followed. This section requires the Discharger to:

1. Implement corrective measures immediately following discovery that applicable water quality requirements were exceeded or a prohibition violated, followed by notification to the Regional Board by telephone as soon as possible but no later than 48 hours after the discharge has been discovered. This notification shall be followed by a report within 14 days to the Regional Board, unless otherwise directed by the Executive Officer that includes:
  - a. the date the violation was discovered;
  - b. the name and title of the person(s) discovering the violation;
  - c. a map showing the location of the violation site;
  - d. a description of recent weather conditions prior to discovering the violation;
  - e. the nature and cause of the water quality requirement violation or exceedence or General WDR prohibition violation;
  - f. photos of the site characterizing the violation;
  - g. the management measure(s) currently being implemented;
  - h. any maintenance or repair of management measures;
  - i. any additional management measures which will be implemented to prevent or reduce discharges that are causing or contributing to the violation or exceedence of applicable water quality requirements or General WDR prohibition violation; and,
  - j. the signature and title of the person preparing the report.

This report shall include an implementation schedule for corrective actions and shall describe the actions taken to reduce the discharges causing or contributing to the violation or exceedence of applicable water quality requirements or General WDR prohibition violation. The Discharger shall revise the appropriate technical report immediately after the report to the Regional Board to incorporate the additional management measures that have been and will be implemented, the implementation schedule, and any additional inspections or monitoring that is needed.

**Schmidbauer NTMP**  
Botanical Survey Report

Prepared by:  
James Regan

### Setting

The Schmidbauer NTMP is located in Section 34, Township 6 North, Range 1 East, HB&M; Humboldt County, on the Arcata South USGS 7.5' quadrangle. The project area is located near the crest of a northwest running ridge with aspects from south to west. Elevation ranges from 400 to 800 feet. Slopes range from 5 to 25 percent. The timber stand is composed of a mature redwood with dense canopy cover (estimated 90%). Some fir and hardwood stand components are scattered throughout the plan area. Riparian zones adjacent to class II and III streams have higher species diversity and the stand type contains more alder, and maple tree species. Roadsides are similarly species rich. The shrub layer is open to moderately dense and composed of *Vaccinium ovatum*, *Gaultheria shallon* and *Rhododendron macrophyllum*. The herbaceous layer is dominated by *Polystichum munitum*, and *Oxalis oregana* in areas away from roads or creeks. Roads in the project area range from paved driveways to seasonal logging roads with skid trails and associated landings. Watercourses in the project area are class II and III streams that ultimately drain to Humboldt Bay.

### Methods

Field surveys were conducted on 4 June 2008 by Mr. Nikos Najarian (botanist). A map showing survey routes is included as Attachment B. Surveys were done as an intuitive assessment of potential habitats based on personal knowledge and visible environmental features such as canopy cover, slope, soil texture, aspect, hydrologic features, and associated tree, shrub, and herbaceous plant species (if present). The survey was floristic in nature and seasonally appropriate when possible. This survey protocol is based on *Guidelines for Assessing the Affects of Proposed Developments on Rare, Threatened, and Endangered Plant and Plant Communities* (CDFG 2000). A list of potential sensitive species is given in Appendix A at the end of this report. This list is the result of a compilation of occurrence data from the California Native Plant Society (CNPS) and California Natural Diversity Database (CNDDB). Those species in bold text were not in season during surveys; therefore, potential for occurrence was based on assessment of habitats present. A complete list of species encountered is found in Attachment C at the end of this report.

### Results

No rare or sensitive species were detected during these surveys.

No potential habitat for out of season sensitive species was detected during these surveys.

No further surveys are required for this NTMP.

Please feel free to call with questions or comments.

Sincerely,  
James Regan

Botanist  
707-443-3329

References

[CDFG] California Department of Fish and Game. 2000. "Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities." State of California.

U.S.D.I – F.W.S. (United States Department of the Interior, Fish and Wildlife Service). 1996. *National List of Vascular Plant Species that Occur in Wetlands: 1996 National Summary*. Ecology Section, National Wetlands Inventory, FWS, report dated March 3, 1997. 209 pp.

CNPS (California Native Plants Society). 2006. *Inventory of Rare and Endangered Plants*. (on-line edition, v7-06a). California Native Plant Society. Sacramento, CA. Accessed 29 February 2008

CNDDB (California Natural Diversity Database). *Rarefind 3.1.0*. Wildlife and Habitat Data Analysis Branch, Department of Fish and Game. Commercial Version dated December 2006.

Hickman, J.C., ed. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press. Berkeley, CA

**Appendix A**  
**List of Potentially Occurring Sensitive Species**

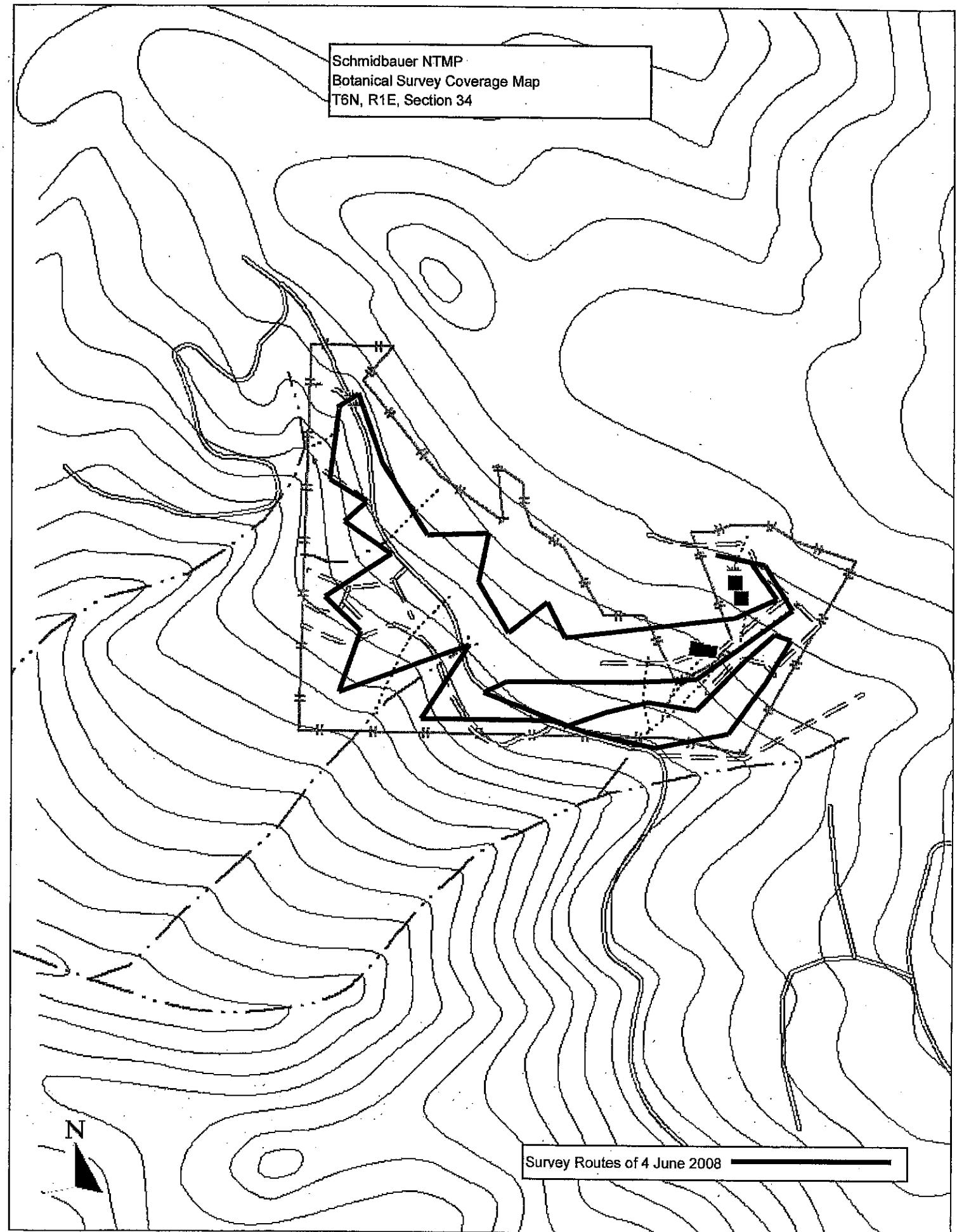
**Schmidbauer NTMP Botanical Survey Results : List of Potentially Occurring Sensitive Plant Species**

<b>Species Name</b>	<b>Common Name</b>	<b>CNPS List</b>	<b>Blooming Period</b>	<b>Habitat in THP</b>
<i>Abronia umbellata</i> ssp. <i>breviflora</i>	pink sand-verbena	1B.1	June-October	No
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	coastal marsh milk-vetch	1B.2	April-October	No
<i>Astragalus umbratilicus</i>	Bald mountain milk vetch	2.3	May-August	No
<i>Carex arota</i>	northern clustered sedge	2.2	June-September	No
<i>Carex leptalea</i>	bristle-stalked sedge	2.2	March-July	No
<i>Carex lyngbyei</i>	Lyngbye's sedge	2.2	May-August	No
<i>Carex praticola</i>	northern meadow sedge	2.2	May-July	No
<i>Castilleja affinis</i> ssp. <i>litoralis</i>	Oregon coast paintbrush	2.2	June	No
<i>Castilleja ambigua</i> ssp. <i>humboldtensis</i>	Humboldt Bay owl's-clover	1B.2	April-August	No
<b><i>Coptis laciniata</i></b>	<b>Oregon goldthread</b>	<b>2.2</b>	<b>March-April</b>	<b>No</b>
<i>Cordylanthus maritimus</i> ssp. <i>palustris</i>	Point Reyes bird's-beak	1B.2	June-October	No
<i>Didymodon norissii</i>	Norris' beard moss	2.2		Potential
<i>Epilobium oreganum</i>	Oregon fireweed	1B.2	June-September	No
<b><i>Erythronium menziesii</i> ssp. <i>eurekaense</i></b>	<b>Humboldt Bay wallflower</b>	<b>1B.1</b>	<b>March-April</b>	<b>No</b>
<b><i>Erythronium oregonum</i></b>	<b>giant fawn lily</b>	<b>2.2</b>	<b>March-May</b>	<b>No</b>
<i>Erythronium revolutum</i>	coast fawn lily	2.2	March-July	No
<i>Fissidens pauperculus</i>	minute pocket moss	1B.2		Potential
<i>Gilia capitata</i> ssp. <i>pacifica</i>	Pacific gilia	1B.2	April-August	No
<i>Gilia multifoliata</i>	dark-eyed gilia	1B.2	April-July	No
<i>Hesperoxys sparsiflora</i> var. <i>breviflilia</i>	short leaved evax	2.2	March-June	No
<i>Lathyrus japonicus</i>	seaside pea	2.2	May-August	No
<i>Lathyrus palustris</i>	marsh pea	1B.2	March-August	No
<i>Layia carnosa</i>	beach layia	1B.1	March-July	No
<i>Lilium occidentale</i>	western lily	1B.1	June-July	No
<i>Lycopodium clavatum</i>	running-pine	2.3		Yes
<b><i>Monnia howellii</i></b>	<b>Howell's monnia</b>	<b>2.2</b>	<b>March-May</b>	<b>No</b>
<i>Monotropa uniflora</i>	ghost pipe	2.2	June-August	Potential
<i>Packera bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	2.2	May-July	Potential
<i>Sidalcea malvaefolia</i> ssp. <i>patula</i>	Siskiyou checkerblooms	1B.2	May-August	Potential
<i>Sidalcea oregana</i> ssp. <i>eximia</i>	coast checkerblooms	1B.2	June-August	Potential
<i>Spergularia canadensis</i> var. <i>occidentalis</i>	western sand-spurrey	2.1	June-August	No
<i>Thlaspi californicum</i>	Kneeland Prairie pennycress	1B.1	May-June	No
<i>Viola palustris</i>	marsh violet	2.2	March-August	No

**Species in bold print were not in season at the time of surveys**

**Appendix B  
Survey Route Map**

Schmidbauer NTMP  
Botanical Survey Coverage Map  
T6N, R1E, Section 34



**Appendix C**  
**Comprehensive Species List**

Schmidbauer NTMP - Comprehensive Species List	
<b>Tree Layer</b>	
<i>Acer macrophyllum</i>	bigleaf maple
<i>Alnus rubra</i>	red alder
<i>Ilex aquifolium</i>	English holly
<i>Pseudotsuga menziesii</i> var. <i>menziesii</i>	Douglas-fir
<i>Rhamnus purshiana</i>	cascara
<i>Sequoia sempervirens</i>	coast redwood
<b>Shrub Layer</b>	
<i>Berberis nervosa</i>	dwarf Oregon-grape
<i>Ceanothus integerrimus</i>	deer brush
<i>Cotoneaster pannosa</i>	cotoneaster
<i>Cytisus scoparius</i>	Scotch broom
<i>Gaultheria shallon</i>	salal
<i>Holodiscus discolor</i>	oceanspray
<i>Myrica californica</i>	wax myrtle
<i>Oemleria cerasiformis</i>	oso berry
<i>Rhododendron macrophyllum</i>	California rose-bay
<i>Ribes roezlii</i> var. <i>cruentum</i>	Sierra gooseberry
<i>Ribes sanguinuem</i> var. <i>glutinosum</i>	pink-flowering currant
<i>Rubus discolor</i>	Himalayan blackberry
<i>Rubus parviflorus</i>	thimbleberry
<i>Rubus ursinus</i>	California blackberry
<i>Sambucus racemosa</i> var. <i>racemosa</i>	red elderberry
<i>Vaccinium ovatum</i>	evergreen huckleberry
<i>Vaccinium parvifolium</i>	red huckleberry
<b>Herbaceous Layer</b>	
<i>Actaea rubra</i>	baneberry
<i>Adiantum aleuticum</i>	five-fingered fern
<i>Anthoxanthum odoratum</i>	sweet vernal grass
<i>Asarum caudatum</i>	wild ginger
<i>Athyrium filix-femina</i>	lady fern
<i>Bellis perennis</i>	English daisy
<i>Bromus vulgaris</i>	narrow-flowered brome
<i>Cardamine californica</i>	California toothwort or milk maids
<i>Cardamine oligosperma</i>	western bittercress
<i>Carex deweyana</i> ssp. <i>leptopoda</i>	short-scaled sedge
<i>Carex gynandra</i>	Olney's hairy sedge
<i>Carex obnupta</i>	slough sedge
<i>Claytonia sibirica</i>	Siberian candyflower
<i>Clintonia andrewsiana</i>	bead lily
<i>Cortaderia jubata</i>	jubata grass
<i>Dactylis glomerata</i>	orchard grass
<i>Disporum hookeri</i>	Hooker's fairy bells
<i>Equisetum telmateia</i> ssp. <i>braunii</i>	giant horsetail
<i>Galium</i> sp.	bedstraw
<i>Hedera helix</i>	English ivy
<i>Hierochloe occidentalis</i>	vanilla grass
<i>Holcus lanatus</i>	common velvet grass
<i>Hydrophyllum tenuipes</i>	Pacific waterleaf
<i>Hypochaeris radicata</i>	hairy cat's-ear
<i>Iris</i> sp.	iris
<i>Juncus effusus</i>	common rush

<i>Juncus patens</i>	spreading rush
<i>Lathyrus</i> sp.	pea
<i>Leucanthemum vulgare</i>	ox-eye daisy
<i>Lonicera hispidula</i> var. <i>vacillans</i>	hairy honeysuckle
<i>Lupinus rivularis</i>	riverbank lupine
<i>Lysichiton americanum</i>	skunk cabbage
<i>Myosotis latifolia</i>	forget-me-not
<i>Oenanthe sarmentosa</i>	Pacific water-parsley
<i>Osmorhiza chilensis</i>	mountain sweet-cicely
<i>Oxalis oregana</i>	redwood sorrel
<i>Petasites frigidus</i> var. <i>palmatus</i>	western coltsfoot
<i>Plantago lanceolata</i>	English plantain
<i>Polystichum munitum</i>	sword fern
<i>Prunella vulgaris</i>	self-heal
<i>Pteridium aquilinum</i> var. <i>pubescens</i>	western bracken fern
<i>Ranunculus</i> sp.	buttercup
<i>Rumex crispus</i>	curly dock
<i>Scoliopus bigelovii</i>	slink-pod
<i>Scrophularia californica</i>	coast figwort
<i>Stachys</i> sp.	hedge-nettle
<i>Tellima grandiflora</i>	fringe cups
<i>Tolmiea menziesii</i>	youth-on-age
<i>Trientalis latifolia</i>	Pacific star flower
<i>Trillium ovatum</i>	western trillium
<i>Urtica dioica</i> ssp. <i>holosericea</i>	stinging nettle
<i>Vancouveria planipetala</i>	redwood inside-out flower
<i>Viola sempervirens</i>	evergreen violet

Date: 1/24/08

Plan Name: Schmidbauer THP

Quad: Arcata South and Arcata North

Please check:

- NSO Database Request  
 Natural Diversity Database Request
- 

County Humboldt

T 6N, R 1E

Sections 21,22,23,26,27,28,29,32,33,34,35

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County Humboldt

T 5N, R 1E

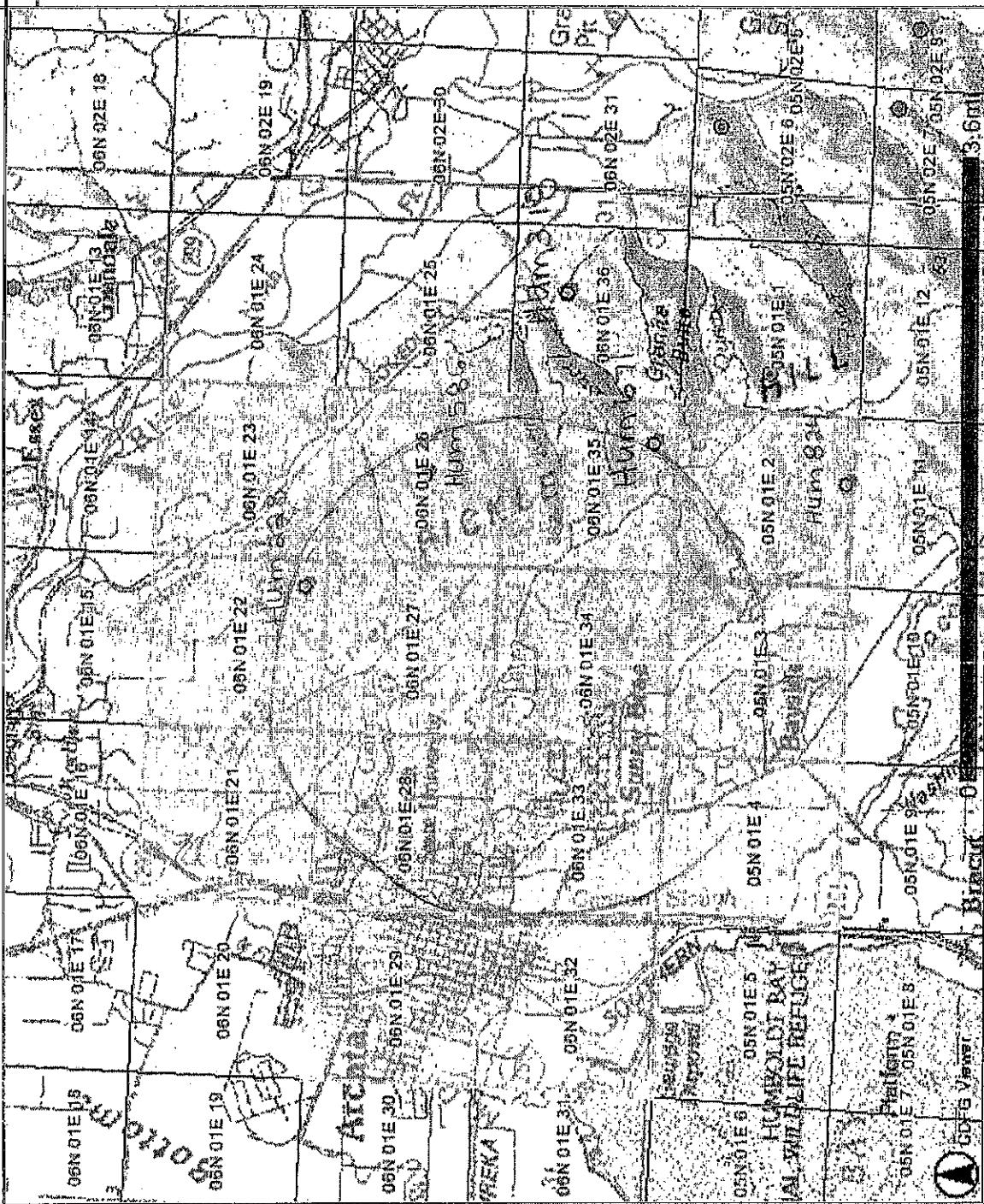
Sections 2,3,4

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Map Legend

- Spotted Owl Territories [ds37]
- PLS (projected)
- Western States
- Mexico





California Department of Fish and Game  
Spotted Owl Database Management System

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**Report # 1 - Sections Searched**

List of all sections selected and searched with located territories, by section. A blank value indicates no territory found.

MTRS: H 05N 01E 02	Territory	County
	HUM0824	HUM
MTRS: H 05N 01E 03	Territory	County
MTRS: H 05N 01E 04	Territory	County
MTRS: H 06N 01E 21	Territory	County
MTRS: H 06N 01E 22	Territory	County
	HUM0228	HUM
MTRS: H 06N 01E 23	Territory	County
MTRS: H 06N 01E 26	Territory	County
	HUM0586	HUM
MTRS: H 06N 01E 27	Territory	County
	HUM0228	HUM
MTRS: H 06N 01E 28	Territory	County
MTRS: H 06N 01E 29	Territory	County
MTRS: H 06N 01E 32	Territory	County
MTRS: H 06N 01E 33	Territory	County
MTRS: H 06N 01E 34	Territory	County
MTRS: H 06N 01E 35	Territory	County
	HUM0318	HUM
	HUM0671	HUM



California Department of Fish and Game  
Spotted Owl Database Management System

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**Report #2 - Territories Found**

Summary data for each located spotted owl territory.

Twn	Rng	Sect	1/4	1/16	1/64	Owner Type	Owner	Year Terr. Verified	Nest/Yng Known
Territory: HUM0228					Locale: WARREN CR			- NO ACTIVITY	SubSpecies: NORTHERN
06N	01E	22	SE	SE		PVT	SMP	2005 - S	-
Territory: HUM0318					Locale: PALMER CR			- OUT OF 1.3	SubSpecies: NORTHERN
06N	01E	36	NE	SW	NW	PVTI	SMP	2005 - P	2005 - 2005
Territory: HUM0586					Locale: LEGGIT CR			- IN BAA, 2005	SubSpecies: NORTHERN
06N	01E	26	C			PVT		2005 - P	-
Territory: HUM0671					Locale: PALMER CR			- OUT OF 1.3	SubSpecies: NORTHERN
06N	01E	35	SE	S	C	PVTI	SMP	1994 - P	1993 -
Territory: HUM0824					Locale: FICKLE HILL			- OUT OF 1.3	SubSpecies: NORTHERN
05N	01E	02	SE	SW	SW	PVT		2005 - P	-



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Spotted Owl Database Management System

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**Report #3: Observations Reported**

List of observations reported, by territory

Twn	Rng	Sect	1/4	1/16	1/64	Date Obs	Time Obs	Observer	No. of Owls	Age Sex	Pair	Nest	No. of Young
<b>Territory: HUM0228</b>													
06N	01E	22	SE	SE		8/2/1990		X	KELLEY	1	UU		
06N	01E	22				5/11/1992			LEISTEN	1	UU		
06N	01E	27				1/1/1997				0			
06N	01E	27				1/1/1999				0			
06N	01E	23				4/17/1999	2200		EMBREE	0			
06N	01E	23				4/27/1999	2048		EMBREE	0			
06N	01E	23				5/24/1999	2148		EMBREE	0			
06N	01E	23				6/28/1999	2106		EMBREE	0			
06N	01E	23				8/16/1999	2210		EMBREE	0			
06N	01E	23				8/30/1999	2115		EMBREE	0			
06N	01E	27				1/1/2000				0			
06N	01E	23				3/16/2000	1832		HERRERA	0			
06N	01E	23				3/23/2000	2026		HERRERA	0			
06N	01E	23				4/12/2000	2132		HERRERA-HOINESS	0			
06N	01E	23				4/29/2000	2047		HERRERA	0			
06N	01E	23				5/9/2000	2025		HOINESS	0			
06N	01E	23				5/15/2000	2335		HOINESS	0			
06N	01E	23	SW			6/20/2000	2128		EMBREE	0			
06N	01E	23	NW	SE		7/1/2000	0014		EMBREE	0			
06N	01E	23	SW			8/16/2000	2059		EMBREE	0			
06N	01E	23	SW			4/3/2001	2020		EMBREE	0			
06N	01E	22	SE			4/8/2001	2004		EMBREE	0			
06N	01E	22	SE			5/10/2001	2128		EMBREE	0			
06N	01E	23	SW			5/16/2001	1949		EMBREE	0			
06N	01E	24				6/8/2001	2104		HAGGARD	0			
06N	01E	22	SE			6/10/2001	2112		EMBREE	0			
06N	01E	24				6/15/2001	2100		HAGGARD	0			
06N	01E	24				6/22/2001	2103		HAGGARD	0			
06N	01E	24				6/29/2001	2103		HAGGARD	0			
06N	01E	24				7/23/2001	2055		HAGGARD	0			
06N	01E	23				3/14/2002	2152		GWH-GAH	0			
06N	01E	22	SE			3/28/2002	2036		MANTEL	0			
06N	01E	22	SE			4/11/2002	2040		MANTEL	0			
06N	01E	22	SE			4/18/2002	2229		MANTEL	0			
06N	01E	23				4/18/2002	2108		GAH	0			
06N	01E	22	SE			4/26/2002	0509		MANTEL	0			
06N	01E	22	SE			5/16/2002	2034		MANTEL	0			
06N	01E	22				3/3/2003	1809		PM	0			



California Department of Fish and Game  
Spotted Owl Database Management System

**Report #3 - Observations Reported**

List of observations reported, by territory

Twn	Rng	Sect	1/4	1/16	1/64	Date Obs	Time Obs	Observer	No. of Owls	Age Sex	Pair	Nest	No. of Young
06N	01E	22				3/17/2003	0602	PM	0				
06N	01E	26				3/24/2003	1950	MANTEL	0				
06N	01E	22				3/31/2003	1840	PM	0				
06N	01E	22	SE			4/14/2003	2008	MANTEL	0				
06N	01E	22	SE			4/30/2003	2026	MANTEL	0				
06N	01E	22				5/1/2003	0541	PM	0				
06N	01E	22	SE			5/7/2003	2035	MANTEL	0				
06N	01E	22	SE			5/13/2003	2039	MANTEL	0				
06N	01E	27				5/20/2003	2351	MANTEL	0				
06N	01E	27				5/21/2003	2039	ANDRE	0				
06N	01E	22				6/2/2003	2204	PM	0				
06N	01E	22				6/5/2003	2045	PM	0				
06N	01E	22				6/12/2003	2049	PM	0				
06N	01E	27				6/24/2003	2110	ANDRE	0				
06N	01E	27	NE			3/23/2004	2053	EMBREE	1	UM			
06N	01E	27	NE			3/24/2004	1020	MANTEL	0				
06N	01E	22				4/8/2004	1950	MANTEL	0				
06N	01E	22				4/27/2004	2207	MANTEL	0				
06N	01E	27	N			5/17/2004	2023	ANDRE	0				
06N	01E	27	N			5/26/2004	2030	ANDRE	0				
06N	01E	27	N			6/16/2004	2040	ANDRE	0				
06N	01E	22				4/4/2005	2231	EMBREE	0				
06N	01E	28				4/27/2005	2015	HUBBARD	0				
06N	01E	22				4/28/2005	0905	MCDOWALL	0				
06N	01E	27				4/29/2005	1011	MCDOWALL	0				
06N	01E	22				5/6/2005	1032	MCDOWALL	0				
06N	01E	28				5/11/2005	2030	HUBBARD	0				
06N	01E	22	SE			5/23/2005	1101	MCDOWALL	0				
06N	01E	28	SE	NE		6/2/2005	2055	FLACKUS	0				
06N	01E	27				6/7/2005	2230	DEARMOND	0				
06N	01E	28				6/14/2005	1915	FLACKUS	0				
06N	01E	27				6/20/2005	1944	DEARMOND	0				
06N	01E	27				6/22/2005	2305	DEARMOND	0				
06N	01E	28				6/24/2005	2110	FLACKUS	0				
06N	01E	27				6/30/2005	2223	DEARMOND	0				
06N	01E	28				6/30/2005	2120	FLACKUS	0				
06N	01E	27				7/8/2005	2122	DEARMOND	0				

Territory: HUM0318

06N 01E 35 NE S S 8/8/1990

KELLY-VERTREES

2

UMUF

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California Department of Fish and Game  
Spotted Owl Database Management System

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**Report # 3 Observations Reported**

List of observations reported, by territory

Twn	Rng	Sect	1/4	1/16	1/64	Date Obs	Time Obs	Observer	No. of Owls	Age Sex	Pair	Nest	No. of Young
06N	01E	36	NW	NW	S	8/8/1990	9999	KELLY-VERTREES	2	UMUF	Y		
06N	01E	35	NE	S	S	8/9/1990		KELLY-VERTREES	2	UMUF	Y		
06N	01E	36	NW	NW	S	8/9/1990	9999	KELLY-VERTREES	2	UMUF	Y		
06N	01E	35	NE	S	S	8/29/1990		KELLY	2	UMUF	Y		
06N	01E	36	NW	NW	S	8/29/1990	9999	KELLY	2	UMUF	Y		
06N	01E	36	NW	NE		1/1/1991		DILLER(SIMPSON)	2	UMUF	Y		
06N	01E	36	SE	NE		1/1/1991		SPI	1	UM			
06N	01E	36	NE	C		1/1/1992		SIMPSON	2	UMUF	Y		
06N	02E	31	SW	NW		1/1/1992		SPI	1	UM			
06N	01E	36	NE	SW		4/14/1992		MCALLISTER	2	UMUF	Y		
06N	01E	36	NW	NW		6/18/1992		LEISTEN+	1	UM			
06N	01E	35	SW	NE		12/1/1992		LEVALLEY-CBC	2	UUUU			
06N	01E	36	NE	C		1/1/1993		DILLER (SIMPSON)	2	UMUF	Y		
06N	01E	35	SW	NE		12/1/1993		LEVALLEY-CBC	1	UU			
06N	01E	36	NE	SW	NE	1/1/1994		SIMPSON	1	UU			
06N	01E	36	NW	E	C	1/1/1997		SIMPSON	2	UMUF	Y		0
06N	01E	36	NW	SE		1/1/1998		SIMPSON-not checked		NS			
06N	01E	36				4/17/1999	2200	EMBREE	0				
06N	01E	36				4/27/1999	2048	EMBREE	0				
06N	01E	36				5/24/1999	2148	EMBREE	0				
06N	01E	36				6/28/1999	2106	EMBREE	0				
06N	01E	36				8/16/1999	2210	EMBREE	0				
06N	01E	36				8/30/1999	2115	EMBREE	0				
06N	01E	36				3/29/2000	1945	EMBREE	0				
06N	01E	36				4/21/2000	2012	EMBREE	0				
06N	01E	36				5/7/2000	2105	EMBREE	0				
06N	01E	36	NW			6/22/2000	2325	EMBREE	1	UM			
06N	01E	36				6/30/2000	2248	EMBREE	1	UM			
06N	01E	36	NE	SW		7/3/2000	2005	EMBREE	0				
06N	01E	36	NE	SW		4/8/2001	1805	EMBREE	1	UM			
06N	01E	36	NE			5/16/2001	2307	EMBREE	1	UM			
06N	01E	36	NE	SW		5/18/2001	1350	EMBREE	2	UMUF	Y		
06N	01E	36				3/28/2002	2120	MANTEL	0				
06N	01E	36	NW	SE		4/11/2002	1710	MANTEL	2	UMUF	Y	Y	
06N	01E	36				1/1/2003		via THP	2	UMUF	Y	Y	
06N	01E	36	NW	SE		3/31/2003	1715	MANTEL	2	UMUF	Y	N	
06N	01E	36	SW	NW		4/15/2003	2031	MANTEL	1	UM			
06N	01E	36	NE	W	W	6/12/2003	1640	MANTEL	2	UMUF	Y	Y	
06N	01E	36	NE	NW		3/23/2004	1735	MANTEL	1	UM			



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**Report # 3- Observations Reported**

List of observations reported, by territory

Twn	Rng	Sect	1/4	1/16	1/64	Date Obs	Time Obs	Observer	No. of Owls	Age Sex	Pair	Nest	No. of Young
06N	01E	36	NE	NW		4/9/2004	1830	MANTEL	2	UMUF	Y	Y	
06N	01E	36	NE	SE		7/5/2004	1400	EMBREE	1	UF	Y		1
06N	01E	36	NE	SE		7/15/2004	1400	EMBREE	1	UF	Y		1
06N	01E	36	NE	SW	NW	4/5/2005	1803	x	EMBREE	2	UMUF	Y	Y
06N	01E	36	NE	SW	NW	4/29/2005	1745	MCDOWALL	2	UMUF	Y	Y	
06N	01E	36	NE	SW	NW	5/23/2005	1850	MCDOWALL	2	UMUF	Y	Y	1

**Territory: HUM0586**

06N	01E	26	C			3/6/1992	x	MARTIN-CFA	2	UMUF	Y		
06N	01E	26				3/25/1992		MARTIN-CFA	1	UF			
06N	01E	26				4/13/1992		MARTIN-CFA	2	UMUF			
06N	01E	26				4/14/1992		MARTIN-CFA	2	UMUF	Y		
06N	01E	26				1/1/1997			0				
06N	01E	26				1/1/1999			0				
06N	01E	24				4/17/1999	2200	EMBREE	0				
06N	01E	24				4/27/1999	2048	EMBREE	0				
06N	01E	24				5/24/1999	2148	EMBREE	0				
06N	01E	24				6/28/1999	2106	EMBREE	0				
06N	01E	24				8/16/1999	2210	EMBREE	0				
06N	01E	24				8/30/1999	2115	EMBREE	0				
06N	01E	26				1/1/2000			0				
06N	01E	24				3/16/2000	1832	HERRERA	0				
06N	01E	24				3/23/2000	2026	HERRERA	0				
06N	01E	24				4/12/2000	2132	HERRERA-HOINESS	0				
06N	01E	24				4/29/2000	2047	HERRERA	0				
06N	01E	24				5/9/2000	2025	HOINESS	0				
06N	01E	24				5/15/2000	2335	HOINESS	0				
06N	01E	26				6/20/2000	2150	EMBREE	0				
06N	01E	26				6/30/2000	2213	EMBREE	0				
06N	01E	26				8/16/2000	2020	EMBREE	0				
06N	01E	23	SE			3/16/2001	2252	LBJ-GAH	0				
06N	01E	23	SE			4/3/2001	2227	LBJ-HOINESS	0				
06N	01E	26				4/3/2001	2151	EMBREE	0				
06N	01E	26	SE	NE		4/12/2001	1301	EMBREE	2	UMUF	Y		
06N	01E	26	SE			5/10/2001	2153	EMBREE	1	UF			
06N	01E	26	SE	NE		5/10/2001	1320	EMBREE	1	UU			
06N	01E	26				5/16/2001	2125	EMBREE	0				
06N	01E	26	NE			5/16/2001	2212	LBJ-HOINESS	1	UF			
06N	01E	24				6/8/2001	2104	HAGGARD	0				
06N	01E	26	SE			6/10/2001	2338	EMBREE	1	UU			



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**Report # 3 - Observations Reported**

List of observations reported, by territory

Twn	Rng	Sect	1/4	1/16	1/64	Date Obs	Time Obs	Observer	No. of Owls	Age Sex	Pair	Nest	No. of Young
06N	01E	26	SE	SE		6/12/2001	0209	MANTEL	1	UF			
06N	01E	24				6/15/2001	2100	HAGGARD	0				
06N	01E	24				6/22/2001	2103	HAGGARD	0				
06N	01E	24				6/29/2001	2103	HAGGARD	0				
06N	01E	24				7/23/2001	2055	HAGGARD	0				
06N	01E	26					1/1/2002	via THP	1	UF			
06N	01E	26	NE	SW		3/27/2002	1928	LBJ-OBRIEN	1	UF			
06N	01E	26	SE			3/28/2002	1859	MANTEL	1	UM			
06N	01E	26				3/29/2002	0720	MANTEL	0				
06N	01E	26				4/11/2002	1810	MANTEL	0				
06N	01E	26				4/11/2002	2008	MANTEL	0				
06N	01E	26	SE			4/18/2002	2105	MANTEL	1	UU			
06N	01E	26				4/19/2002	1100	MANTEL	0				
06N	01E	26				4/26/2002	0616	MANTEL	0				
06N	01E	26	SE			5/16/2002	1806	MANTEL	1	UM			
06N	01E	26	SE			5/16/2002	2147	MANTEL	1	UU			
06N	01E	26				1/1/2003		via THP	1	UF			
06N	01E	26				3/31/2003	1825	MANTEL	0				
06N	01E	26				4/15/2003	1956	MANTEL	0				
06N	01E	26	SE			4/30/2003	2222	MANTEL	1	UU			
06N	01E	25	SW	SW		5/1/2003	0930	MANTEL	0				
06N	01E	26				5/20/2003	2032	MANTEL	0				
06N	01E	26	SE			6/4/2003	2037	MANTEL	2	UMUF	Y		
06N	01E	26	SE	S	C	6/5/2003	0950	MANTEL	1	UF			
06N	01E	26	NE			3/23/2004	1933	EMBREE	1	UM			
06N	01E	26				3/24/2004	1220	MANTEL	0				
06N	01E	26				4/8/2004	2207	MANTEL	0				
06N	01E	26				4/27/2004	2153	MANTEL	0				
06N	01E	27	E			5/17/2004	2023	ANDRE	0				
06N	01E	26				5/24/2004	2035	MANTEL	0				
06N	01E	27	E			5/26/2004	2030	ANDRE	0				
06N	01E	27	E			6/16/2004	2040	ANDRE	0				
06N	01E	26				4/5/2005	1944	EMBREE	0				
06N	01E	26	SW			4/5/2005	0012	EMBREE	1	UF			
06N	01E	26				4/28/2005	0935	MCDOWALL	0				
06N	01E	26				4/29/2005	1028	MCDOWALL	0				
06N	01E	26				4/29/2005	2108	MCDOWALL	0				
06N	01E	26	NE			5/5/2005	1043	MCDOWALL	0				
06N	01E	26				5/6/2005	0850	MCDOWALL	0				



**California Department of Fish and Game**  
**Spotted Owl Database Management System**

**Report #3 - Observations Reported**

List of observations reported, by territory

Twn	Rng	Sect	1/4	1/16	1/64	Date Obs	Time Obs	Observer	No. of Owls	Age Sex	Pair	Nest	No. of Young
06N	01E	26				5/23/2005	0926	MCDOWALL	0				

**Territory: HUM0671**

06N	01E	35				8/8/1990		KELLY+	2	UMUF	Y		
06N	01E	35				8/9/1990		KELLY+	2	UMUF	Y		
06N	01E	35				8/29/1990		KELLY	2	UMUF	Y		
06N	01E	35	SE	S	C	1/1/1993	x	DILLER (SIMPSON)	2	UMUF	Y	Y	
06N	01E	35	SE	SW	NE	1/1/1994		SIMPSON	1	UU			
06N	01E	35				1/1/1997			0				
06N	01E	35				1/1/1999			0				
06N	01E	35				1/1/2000			0				
06N	01E	35				6/22/2000	2255	EMBREE	0				
06N	01E	35				8/16/2000	2255	EMBREE	0				
06N	01E	35				4/8/2001	2102	EMBREE	0				
06N	01E	35				5/16/2001	2159	EMBREE	0				
06N	01E	35				6/10/2001	2232	EMBREE	0				
06N	01E	35				4/15/2003	2046	MANTEL	0				
06N	01E	35				5/20/2003	2117	MANTEL	0				
06N	01E	35				3/23/2004	2003	MANTEL	0				
06N	01E	35				4/9/2004	2005	MANTEL	0				
06N	01E	35				4/12/2004	2058	MANTEL	0				
06N	01E	35				4/28/2004	2258	MANTEL	0				
06N	01E	35				5/19/2004	2031	MANTEL	0				
06N	01E	35	SE			4/11/2005	0720	MCDOWALL	0				
06N	01E	35	SE			5/5/2005	0940	MCDOWALL	0				
06N	01E	35	SE			6/1/2005	1001	MCDOWALL	0				

**Territory: HUM0824**

05N	01E	02	SW	SW	SE	1/1/1993		WTS	1	UM			
05N	01E	11	SW	S		5/30/1995	2400	LOGAN-GRAHAM	1	AM			
05N	01E	11	SW	S		5/31/1995	0930	LOGAN-GRAHAM	1	AM			
05N	01E	11	NE	NW		6/12/1995	2202	SOLINSKY	1	UM			
05N	01E	11	NW	NE		6/21/1995	2400	LOGAN-GRAHAM	1	UM			
05N	01E	11	NW	NE		6/22/1995	0730	LOGAN-GRAHAM	1	UM			
05N	01E	11				3/17/2001		RWH-EJH-AJC-MT-CS- PG	0				
05N	01E	11				4/12/2001		ROBINSON	0				
05N	01E	02	SE	SW	SW	4/27/2001	x	ROBINSON	2	UMUF	Y	Y	
05N	01E	02	SE	SW	SW	4/27/2001	2131	ROBINSON	1	UM			
05N	01E	02	SE	SW	SW	5/1/2001	1015	ROBINSON	2	UMUF	Y	Y	



California Department of Fish and Game  
Spotted Owl Database Management System

7 OF 7

**Report #3 - Observations Reported**

List of observations reported, by territory

Twn	Rng	Sect	1/4	1/16	1/64	Date Obs	Time Obs	Observer	No. of Owls	Age Sex	Pair	Nest	No. of Young
05N	01E	02	SE	SW		3/4/2002	1657	LBJ-HEWITT-ROBINSON	1	UF			
05N	01E	02	SE	SW	SE	3/4/2002		RWH	1	UF			
05N	01E	02	SE	SW	SW	3/4/2002		ROBINSOM-HEWITT	2	UMUF	Y		
05N	01E	11				3/4/2002		RWH-NPR	0				
05N	01E	02				3/14/2002	2020	GALEA	0				
05N	01E	11				3/19/2002		HEWITT	0				
05N	01E	11				4/2/2002		NPR	0				
05N	01E	02	SE	SW		4/8/2002	1650	GSM	2	UMUF	Y		
05N	01E	02				5/3/2002	2111	SCALVINI	0				
05N	01E	02				5/3/2002	2331	SCALVINI	0				
05N	01E	12	NW	NW		5/6/2002	2352	GSM	0				
05N	01E	02	SE	SW		5/28/2002	1456	GSM	1	UF			
05N	01E	12	NW	NW		5/30/2002	2146	GSM	1	UU			
05N	01E	02				5/31/2002	2400	SCALVINI	1	UM			
05N	01E	12	NW			4/7/2003	1935	GSM	0				
05N	01E	12	NW			5/11/2003	2216	EMBREE	0				
05N	01E	02				5/12/2003	2022	ARSENault	0				
05N	01E	02	SE	SW		5/12/2003	1250	GSM	2	UMUF	Y	N	
05N	01E	02				5/20/2003	2304	MANTEL	0				
05N	01E	12	NW			6/4/2003	2255	GSM	1	UU			
05N	01E	02				6/5/2003	2144	ARSENault	0				
05N	01E	02				6/30/2003	2105	ARSENault	0				
05N	01E	02	SE			7/31/2003	0930	GSM	0				
05N	01E	02				3/23/2004	1842	MANTEL	0				
05N	01E	02				4/9/2004	0948	MANTEL	0				
05N	01E	02				4/12/2004	1954	MANTEL	0				
05N	01E	02				4/28/2004	2208	MANTEL	0				
05N	01E	02				5/19/2004	2053	MANTEL	0				
05N	01E	02				3/8/2005	1815	ELSBREE	0				
05N	01E	02				3/16/2005	2034	ELSBREE	0				
05N	01E	02	SE			4/12/2005	0810	MCDOWALL	0				
05N	01E	02				4/19/2005	2006	ELSBREE-NE	0				
05N	01E	02	SE			5/5/2005	0840	MCDOWALL	0				
05N	01E	02	SE			6/1/2005	0905	MCDOWALL	0				
05N	01E	02				6/3/2005	2052	ELSBREE	0				
05N	01E	02				6/26/2005	2053	ELSBREE	0				
05N	01E	02				7/2/2005	2054	ELSBREE	0				

# Schmidbauer THP NSO Location Map

THP Boundary



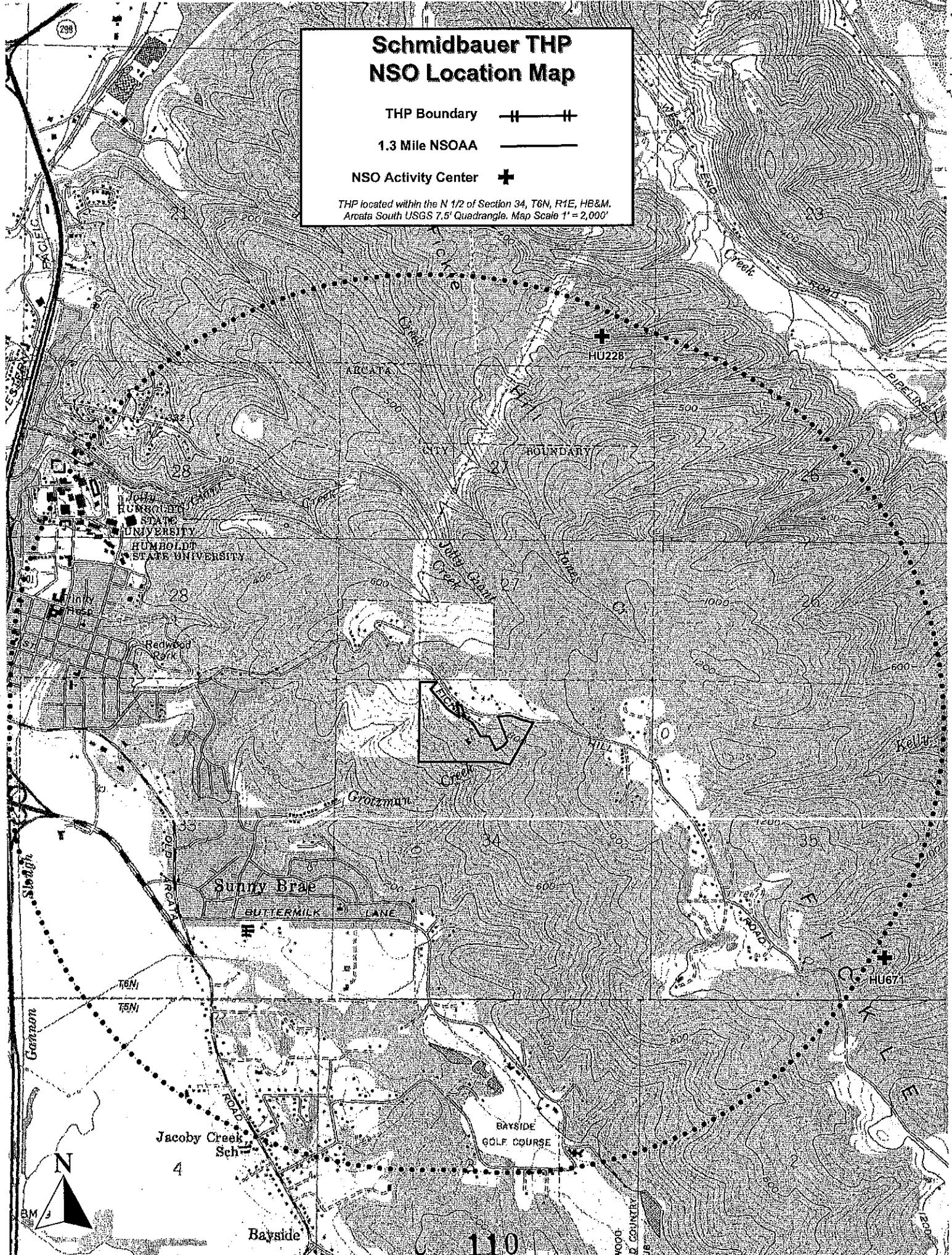
1.3 Mile NSOAA



NSO Activity Center



THP located within the N 1/2 of Section 34, T6N, R1E, H&M.  
Arcata South USGS 7.5' Quadrangle. Map Scale 1" = 2,000'

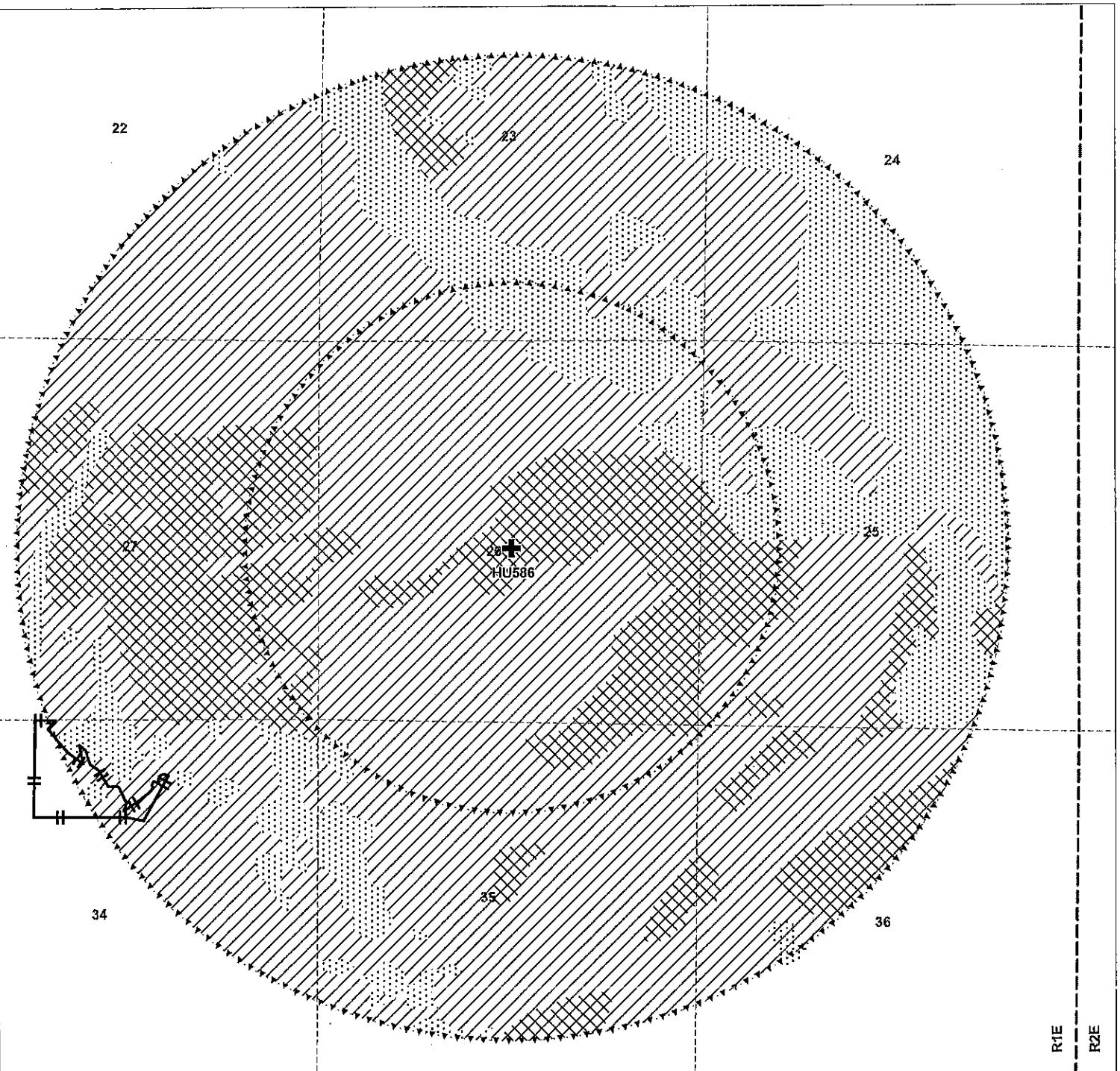


**Schmidbauer THP**  
**NSO Habitat Assessment**

**Activity Center HU-228**

**Habitat**

<b>0.7 Miles</b>	<b>Nesting/Roosting</b>	<b>Foraging</b>	<b>Non-Habitat</b>	<b>Total Acres</b>
Pre-Harvest	278	609	98	985
Post-Harvest	278	609	98	985
Change	-	-	-	
<b>1.3 Miles</b>	<b>Nesting/Roosting</b>	<b>Foraging</b>	<b>Non-Habitat</b>	<b>Total Acres</b>
Pre-Harvest	661	2075	662	3398
Post-Harvest	661	2075	662	3398
Change	-	-	-	



### Schmidbauer THP

#### NSO HU586 Habitat Map

— THP Boundary

···· 0.7. and 1.3 mile buffer

⊕ NSO Activity Center

#### NSO Habitat

···· Non-habitat

××× Nesting-Roosting

// Foraging

Post harvest habitat  
will remain foraging.

T6N

T5N

R1E  
R2E



2005 DOQ

**Schmidbauer THP**  
**NSO HU586 Habitat Map**

- THP Boundary
- ▲ 07. and 1.3 mile buffer
- + NSO Activity Center

**NSO Habitat**

- Non-habitat
- Nesting-Roosting
- Foraging

Post harvest habitat  
will remain foraging.

T6N

T5N

11

Scale: 1"=2000'

R1E

R2E





# United States Department of the Interior



Unit  
39-09  
m

In Reply Refer To:  
8-14-2009-TA-3634

FISH AND WILDLIFE SERVICE  
Arcata Fish and Wildlife Office  
1655 Heindon Road  
Arcata, California, 95521  
Phone: (707) 822-7201 FAX: (707) 822-8411

Ms. Leslie Markham  
Deputy Chief, Forest Practice  
Dept. of Forestry and Fire Protection  
135 Ridgeway Avenue  
Santa Rosa, CA 95402

## Subject: Response to Request for Technical Assistance Regarding Timber Harvest Plan 1-08-166 HUM

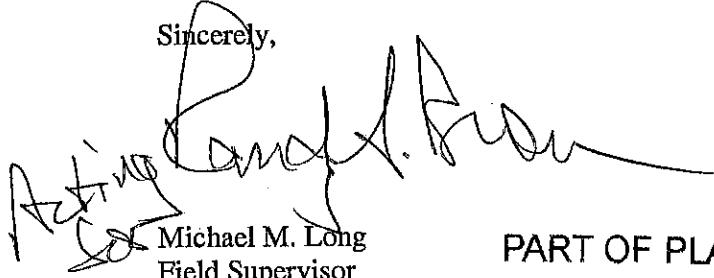
Dear Ms. Markham:

This responds to a request for U.S. Fish and Wildlife Service (Service) technical assistance, received in our office on February 23, 2009, on the above timber harvest plan (THP). At issue in the request is the potential for incidental take of the federally listed northern spotted owl (*Strix occidentalis caurina*) as a result of operations conducted as proposed on the above THP. After review of the information pertaining to this request, the Service provides the following technical assistance.

This is a 26-acre (group selection) proposed THP located in Section 34, Township 6 North, Range 1 East, H.B.&M. in Humboldt County, and currently under review for approval by CAL FIRE. There is one known northern spotted owl activity center (HUM586) located within 1.3 miles of the THP, although not within 1,000 feet (see enclosed map). Adequate habitat will be retained post harvest for this activity center. The Service has determined that operations conducted as proposed would not be likely to result in significant adverse impacts or incidental take of northern spotted owl, provided no operations, other than use and maintenance of existing roads, occur on this THP until additional technical assistance is received from the Service.

All maps and data used to provide this technical assistance are on file at this office. If you have questions regarding this response, please contact Mr. Ken Hoffman of my staff at the Arcata Fish and Wildlife Office at (707) 822-7201.

Sincerely,



Michael M. Long  
Field Supervisor

PART OF PLAN  
RECEIVED

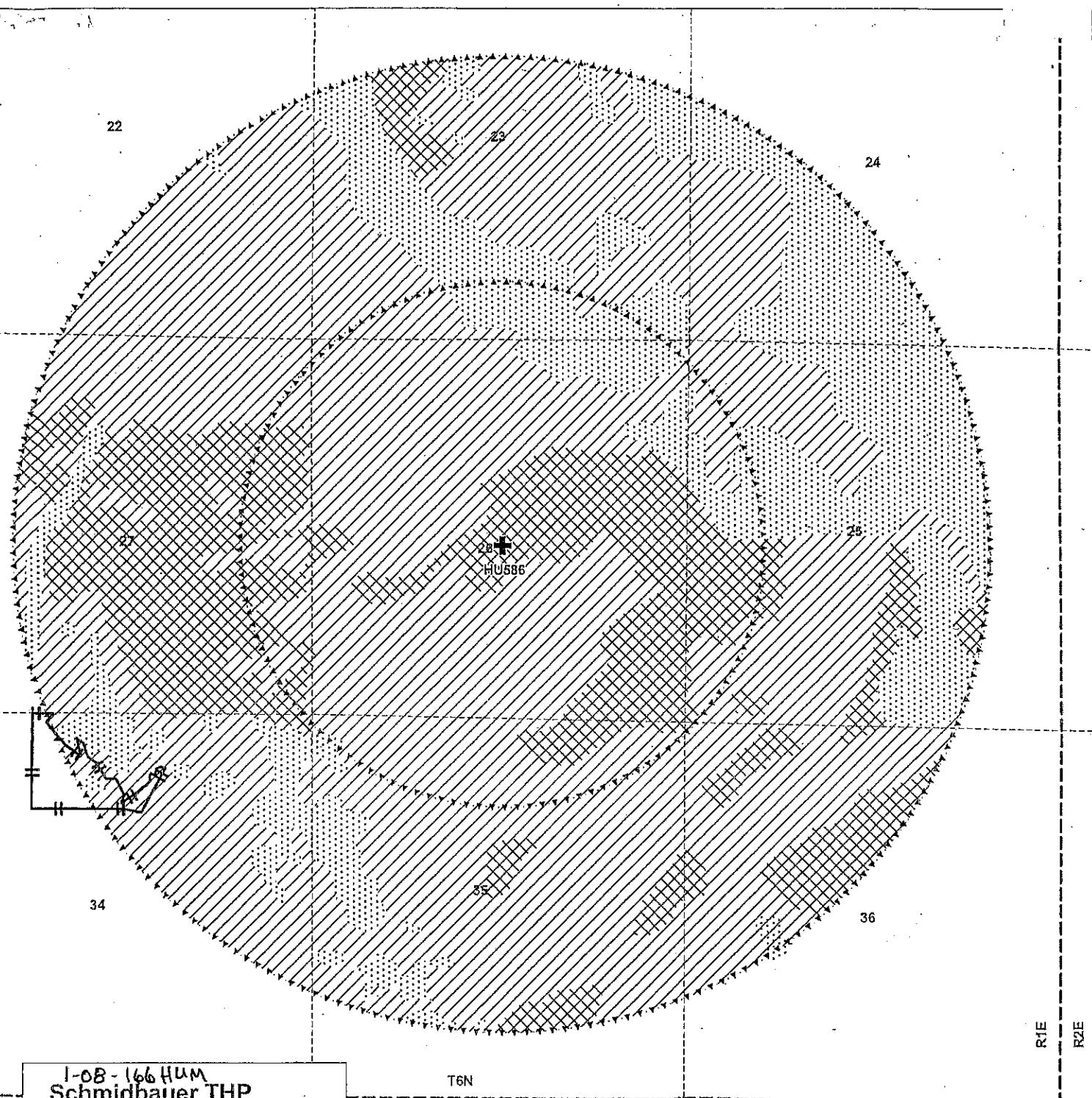
MAR 05 2009

COAST AREA OFFICE  
RESOURCE MANAGEMENT

Enclosure

cc:

CDF: J. Gilman, 118 South Fortuna Blvd., Fortuna, CA 95540  
TRC: N. Robinson, 118 South Fortuna Blvd., Fortuna



I-08-166 HUM  
Schmidbauer THP

NSO HU586 Habitat Map

— THP Boundary

· · · · · 0.7 and 1.3 mile buffer

+ NSO Activity Center

NSO Habitat

· · · · · Non-habitat

· · · · · Nesting-Roosting

· · · · · Foraging

B-14-2009-TA-3634  
Post harvest habitat  
will remain foraging.

T6N

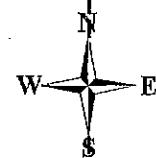
T5N

R1E  
R2E

PART OF PLAN  
RECEIVED

MAR 05 2009

COAST AREA OFFICE  
RESOURCE MANAGEMENT



113.2

Scale: 1"=2000'

Schmidbauer THP  
 CNDB RareFind Data  
 Version 3.1.1  
 Updated December 31, 2007

shname	cname	township	range	section
<i>Arborimus pomus</i>	Sonoma tree vole	06N	01E	28
<i>Ardea herodias</i>	great blue heron	06N	01E	26
<i>Fissidens pauperculus</i>	minute pocket moss	06N	01E	27
<i>Lycopodium clavatum</i>	running-pine	06N	01E	27
<i>Lycopodium clavatum</i>	running-pine	06N	01E	27
<i>Lycopodium clavatum</i>	running-pine	06N	01E	26
<i>Oncorhynchus clarkii clarkii</i>	coast cutthroat trout	06N	01E	21
<i>Pandion haliaetus</i>	osprey	06N	01E	21
<i>Pandion haliaetus</i>	osprey	06N	01E	21
<i>Pandion haliaetus</i>	osprey	06N	01E	26
<i>Pandion haliaetus</i>	osprey	06N	01E	22
<i>Pandion haliaetus</i>	osprey	06N	01E	26
<i>Pandion haliaetus</i>	osprey	06N	01E	27
<i>Pandion haliaetus</i>	osprey	06N	01E	22
<i>Pandion haliaetus</i>	osprey	06N	01E	23
<i>Rhyacotriton variegatus</i>	southern torrent salamander	06N	01E	28

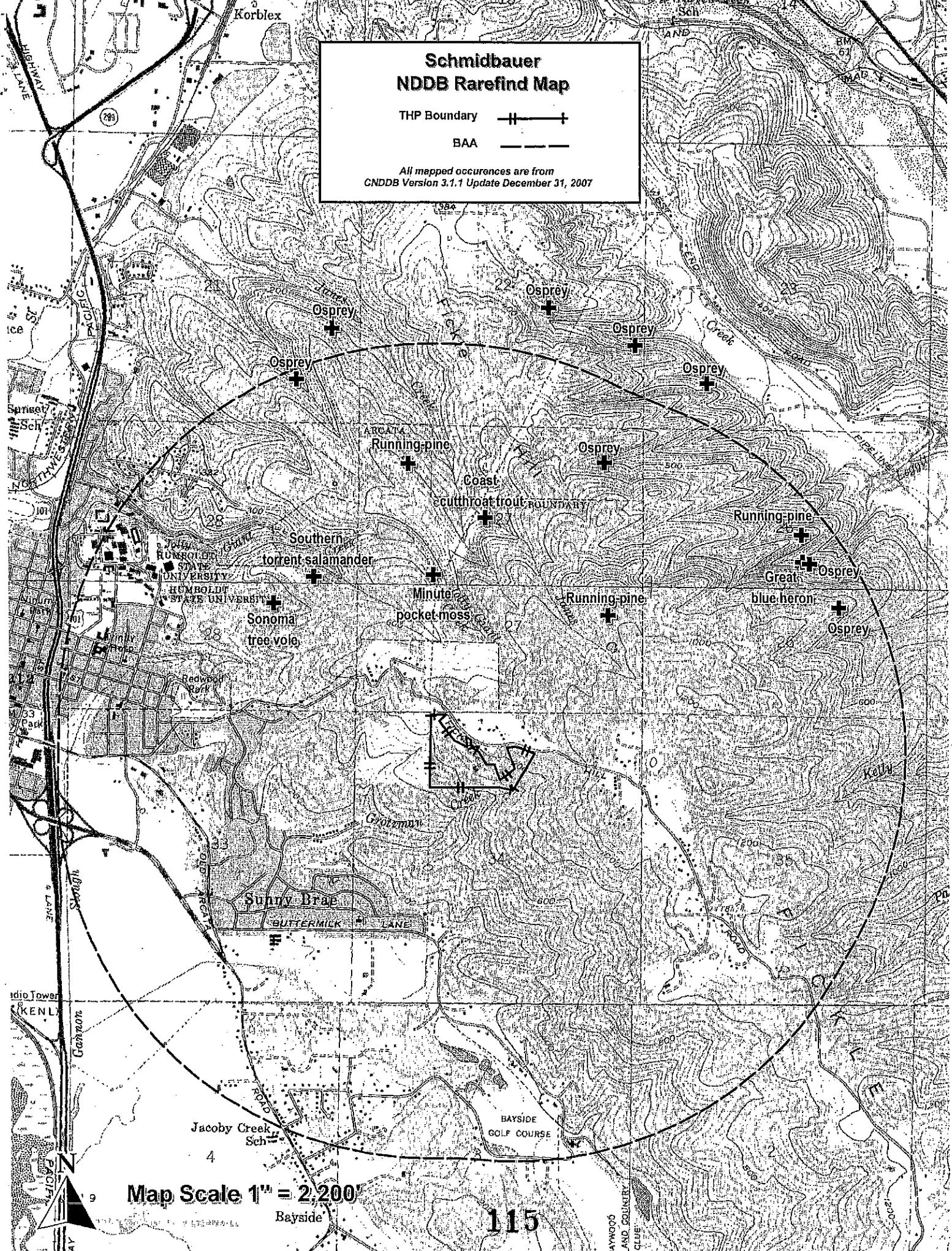
## Schmidbauer NDDB Rarefind Map

THP Boundary



BAA

All mapped occurrences are from  
CNDDB Version 3.1.1 Update December 31, 2007



Map Scale 1" = 2,200'

Beyside

115

California Department of Fish and Game  
 Natural Diversity Database  
 Full Report with Sources for Selected Occurrence

Arborimus pomos	Element Code: AMAFF23030
Sonoma tree vole	
Status	NDDB Element Ranks
Federal: None	Global: G3
State: None	State: S3
Habitat Associations	
General: NORTH COAST FOG BELT FROM OREGON BORDER TO SONOMA CO. IN DOUGLAS-FIR, REDWOOD & MONTANE HARDWOOD-CONIFER FORESTS.	
Micro: FEEDS ALMOST EXCLUSIVELY ON DOUGLAS-FIR NEEDLES. WILL OCCASIONALLY TAKE NEEDLES OF GRAND FIR, HEMLOCK OR SPRUCE.	

Occurrence No. 58	Map Index: 41077	EO Index: 41077	Dates Last Seen
Occ Rank: Unknown			Element: 1981-05-10
Origin: Natural/Native occurrence			Site: 1981-05-10
Presence: Presumed Extant			
Trend: Unknown			Record Last Updated: 1999-05-19

Quad Summary: Arcata South (4012471/672D), Arcata North (4012481/672A)

County Summary: Humboldt

Lat/Long: 40.87389° / -124.06807°	Township: 06N
UTM: Zone-10 N4525307 E410001	Range: 01E
Mapping Precision: NON-SPECIFIC	Section: 28
Symbol Type: POLYGON	Meridian: H
Area:	Elevation: 400 ft

Location: JOLLY GIANT CREEK, AND FICKLE HILL ROAD, ARCATA.

Location Detail:

Ecological:

Threat:

General: 3 SPECIMENS COLLECTED 1 AT EACH DATE; 2/21/1960, 5/3/1961, & 5/10/1981; SPECIMENS HOUSED AT THE VERTEBRATE MUSEUM AT HUMBOLDT STATE UNIVERSITY.

Owner/Manager: UNKNOWN

Sources

GOU98U0002 GOULD, GORDON (DFG). CALIFORNIA DEPARTMENT OF FISH AND GAME, WILDLIFE MANAGEMENT DIVISION, CALIFORNIA RED TREE VOLE COVERAGE - SEPTEMBER 1998. (INFORMATION MANAGED BY WILDLIFE MANAGEMENT, G. GOULD). 1998-09-XX.



California Department of Fish and Game  
 Natural Diversity Database  
 Full Report with Sources for Selected Occurrence

<b>Fissidens pauperculus</b> minute pocket moss		Element Code: NBMUS2W0U0
Status	NDDB Element Ranks	Other Lists
Federal: None State: None	Global: G3? State: S1.2	CNPS List: 1B.2
<b>Habitat Associations</b>		
General: NORTH COAST CONIFEROUS FOREST. Micro: MOSS GROWING ON DAMP SOIL ALONG THE COAST. 10-100M.		

Occurrence No. 3      Map Index: 45403      EO Index: 45403      Dates Last Seen  
 Occ Rank: Unknown      Element: XXXX-XX-XX  
 Origin: Natural/Native occurrence      Site: XXXX-XX-XX  
 Presence: Presumed Extant  
 Trend: Unknown      Record Last Updated: 2007-09-07

Quad Summary: Arcata North (4012481/672A), Arcata South (4012471/672D)  
 County Summary: Humboldt

Lat/Long: 40.87542° / -124.05741°      Township: 06N  
 UTM: Zone-10 N4525465 E410902      Range: 01E  
 Mapping Precision:NON-SPECIFIC      Section: 27      Qtr:XX  
 Symbol Type: POLYGON      Meridian: H  
 Area:      Elevation: 600 ft

Location: ARCATA CITY FOREST, 1 MI FROM FICKLE HILL RD.  
 Location Detail: MAPPED AS BEST GUESS BY CNDDDB TO INCLUDE ARCATA CITY FOREST.

Ecological:  
 Threat:  
 General: NORRIS COLLECTION FROM "JOLLY GIANT CREEK ABOUT 0.5 MILE EAST OF HUMBOLDT STATE UNIVERSITY" ALSO ATTRIBUTED TO THIS OCCURRENCE. NEEDS FIELDWORK.

Owner/Manager: CITY OF ARCATA

Sources

NOR00U0001	NORRIS, D. & J. SHEVOCK. "CONTRIBUTIONS TOWARD A BRYOFLORA OF CALIFORNIA I: A SPECIMEN BASED CATALOGUE OF MOSES AND A KEY TO SPECIES." PARTIAL DRAFT EDITION. 2000-05-07.
NORNDS0011	NORRIS, NORRIS #68754 UNK HERB (CITED IN NOR00U01). XXXX-XX-XX.
NORNDS0035	NORRIS, NORRIS #85082A UNK HERB (CITED IN NOR04A0001). XXXX-XX-XX.



California Department of Fish and Game  
Natural Diversity Database  
Full Report with Sources for Selected Occurrence

<b>Lycopodium clavatum</b> running-pine	<b>Element Code:</b> PPLYC01080	
<b>Status</b>	<b>NDDB Element Ranks</b>	<b>Other Lists</b>
Federal: None	Global: G5	CNPS List: 2.2
State: None	State: S3.2	
<b>Habitat Associations</b>		
General: NORTH COAST CONIFEROUS FOREST, MARSHES AND SWAMPS.		
Micro: FOREST UNDERSTORY; MESIC SITES WITH PARTIAL SHADE AND LIGHT. 45-1640M.		

Occurrence No. 84      Map Index: 54634      EO Index: 54634      — Dates Last Seen —  
Occ Rank: Fair      Element: 1999-01-12  
Origin: Natural/Native occurrence      Site: 1999-01-12  
Presence: Presumed Extant  
Trend: Unknown      Record Last Updated: 2004-03-09

Quad Summary: Arcata North (4012481/672A)

County Summary: Humboldt

Lat/Long: 40.88104° / -124.05915°

UTM: Zone-10 N4526091 E410762

Mapping Precision:SPECIFIC

Symbol Type: POLYGON

Area: 2.9 acres

Township: 06N

Range: 01E

Section: 27      Qtr:NW

Meridian: H

Elevation: 600 ft

Location: ARCATA CITY FOREST, SOUTH SIDE OF JONES CREEK, ABOUT 1.2 AIRM SE OF HIGHWAY 101 CROSSING OF JONES CREEK, EAST ARCATA.

Location Detail: TWO POPULATIONS ON ROAD EDGES IN THE CITY FOREST. MAPPED WITHIN THE NW 1/4 OF THE NW 1/4 OF SECTION 27.

Ecological: PLANT COMMUNITY IS COAST REDWOOD WITH A DOMINANT TREE LAYER OF SEQUOIA SEMPERVIRENS, PSEUDOTSUGA MENZIESII, ABIES GRANDIS, AND TSUGA HETEROPHYLLA. UNDERSTORY AND ASSOCIATES: GAULTHERIA SHALLON, VACCINUM OVATUM, POLYSTICHUM MUNITUM, ET AL.

Threat: MOST OF THE POPULATIONS ARE ON THE ROAD EDGE AND COULD BE TRAMPLED.

General: 2 MATS SEEN IN 1999, ABOUT 3' BY 3' EACH.

Owner/Manager: CITY OF ARCATA

— Sources —

BIV99F0001      BIVIN, M. FIELD SURVEY FORM FOR LYCOPODIUM CLAVATUM. 1999-01-12.

California Department of Fish and Game  
 Natural Diversity Database  
 Full Report with Sources for Selected Occurrence

<b>Lycopodium clavatum</b> running-pine		Element Code: PPLYC01080	
Status		NDDB Element Ranks	Other Lists
Federal: None	Global: G5	CNPS List: 2.2	
State: None	State: S3.2		
<b>Habitat Associations</b>			
General: NORTH COAST CONIFEROUS FOREST, MARSHES AND SWAMPS.			
Micro: FOREST UNDERSTORY; MESIC SITES WITH PARTIAL SHADE AND LIGHT. 45-1640M.			

Occurrence No. 85	Map Index: 54635	EO Index: 54635	Dates Last Seen
Occ Rank: Unknown			Element: 2002-04-24
Orlgn: Natural/Native occurrence			Site: 2002-04-24
Presence: Presumed Extant			
Trend: Unknown			Record Last Updated: 2004-03-09

Quad Summary: Arcata North (4012481/672A)

County Summary: Humboldt

Lat/Long: 40.87762° / -124.03280°

UTM: Zone-10 N4525685 E412978

Mapping Precision:SPECIFIC

Symbol Type: POLYGON

Area: 3.6 acres

Township: 06N

Range: 01E

Section: 26 Qtr:NE

Meridian: H

Elevation: 450 ft

Location: UPPER LEGGIT CREEK, 1.5 AIRMILES SSW OF CONFLUENCE WITH THE MAD RIVER, EAST OF ARCATA.

Location Detail: 3 MATS AT THE CREST OF AN EAST-WEST TRENDING RIDGE. MAPPED AS TWO POLYGONS WITHIN THE CENTER OF THE NORTH 1/2 OF SECTION 26.

Ecological: IN MESIC, SEMI-OPEN AREA IN SEQUOIA SEMPERVIRENS/PSEUDOTSUGA MENZIESII/TSUGA HETEROPHYLLA FOREST WITH RHODODENDRON MACROPHYLLUM, RHAMNUS PURSHIANA, GAULTHERIA SHALLON, LITHOCARPUS DENSIFLORUS, POLYSTICHUM MUNITUM, VACCINIUM OVATUM, ET AL.

Threat: TIMBER HARVESTING AND ROAD CONSTRUCTION. BOTH SOUTHERN MATS LOCATED IN THE MIDDLE OF A PROPOSED ROAD.

General: IN 2002, TWO SOUTHERN MATS WERE 43' BY 43' AND 34' BY 45 FT. NORTHERN MAT WAS 37' BY 32'. SOUTHERN MATS WILL BE TRANSPLANTED OFF OF PROPOSED ROAD PER CDFG RECOMMENDATION AND MONITORED TO ASSESS SUCCESS OF TRANSPLANT PROCEDURE.

Owner/Manager: PVT-MMV FAMILIES

**Sources**

BRO02F0001 BROOKS, M. FIELD SURVEY FORM FOR LYCOPODIUM CLAVATUM. 2002-04-24.

California Department of Fish and Game  
 Natural Diversity Database  
 Full Report with Sources for Selected Occurrence

<b>Oncorhynchus clarkii clarkii</b> coast cutthroat trout		Element Code: AFCHA0208A
Status	NDDB Element Ranks	Other Lists
Federal: None State: None	Global: G4T4 State: S3	CDFG Status: SC
<b>Habitat Associations</b>		
General: SMALL COASTAL STREAMS FROM THE EEL RIVER TO THE OREGON BORDER.		
Micro: SMALL, LOW GRADIENT COASTAL STREAMS & ESTUARIES. NEED SHADED STREAMS WITH WATER TEMPS <18C, & SMALL GRAVEL FOR SPAWNING		

Occurrence No. 40      Map Index: 06927      EO Index: 14903      — Dates Last Seen —  
 Occ Rank: Unknown      Element: 1987-XX-XX  
 Origin: Natural/Native occurrence      Site: 1987-XX-XX  
 Presence: Presumed Extant  
 Trend: Unknown      Record Last Updated: 1996-08-21

Quad Summary: Arcata North (4012481/672A), Arcata South (4012471/672D)

County Summary: Humboldt

Lat/Long: 40.87832° / -124.05396°

UTM: Zone-10 N4525784 E411196

Mapping Precision: SPECIFIC

Symbol Type: POLYGON

Area: 352.7 acres

Township: 06N

Range: 01E

Section: 21      Qtr:NW

Meridian: H

Elevation: 20 ft

Location: JANES CREEK, TRIBUTARY TO MCDANIEL SLOUGH (ARCATA BAY).

Location Detail: 6 MILES OF OCCUPIED OR ACCESSIBLE HABITAT ON JANES CREEK.

Ecological:

Threat:

General: SURVEYED BY HUMBOLDT STATE UNIVERSITY, 1987. RELATIVE ABUNDANCE IS VERY HIGH.

Owner/Manager: PVT

Sources

- GER80U0001      GERSTUNG, ERIC (DFG). LOCALITIES FOR ENDANGERED SALMONIDS: ONCORHYNCHUS AGUABONITA WHITEI, O. CLARKI CLARKI, O. CLARKI HENSHAWI, O. CLARKI SELENIRIS, SALVELINUS CONFLUENTUS. 1980-XX-XX.
- GER85M0001      GERSTUNG, ERIC (DFG). MAPS OF HUMBOLDT AND DEL NORTE COUNTIES. 1985-XX-XX.
- GER96U0001      GERSTUNG, ERIC (DFG). LIST OF STREAMS AND WHEN THEY WERE SURVEYED, AND UPDATES TO RAREFIND PRINTOUTS FOR ONCORHYNCHUS CLARKI CLARKI (COAST CUTTHROAT TROUT). 1996-08-XX.

California Department of Fish and Game  
 Natural Diversity Database  
 Full Report with Sources for Selected Occurrence

<b>Pandion haliaetus</b> osprey		Element Code: ABNKC01010
Status		NDDB Element Ranks
Federal: None	Global: G5	Other Lists
State: None	State: S3	CDFG Status: SC
Habitat Associations		
General: OCEAN SHORE, BAYS, FRESH-WATER LAKES, AND LARGER STREAMS.		
Micro: LARGE NESTS BUILT IN TREE-TOPS WITHIN 15 MILES OF A GOOD FISH-PRODUCING BODY OF WATER.		

Occurrence No. 176      Map Index: 33267      EO Index: 29588      — Dates Last Seen —  
 Occ Rank: Good      Element: 1995-06-12  
 Origin: Natural/Native occurrence      Site: 1995-06-12  
 Presence: Presumed Extant  
 Trend: Unknown      Record Last Updated: 1996-10-16

Quad Summary: Arcata North (4012481/672A)  
 County Summary: Humboldt

Lat/Long: 40.88523° / -124.06672°      Township: 06N  
 UTM: Zone-10 N4526564 E410131      Range: 01E  
 Mapping Precision:SPECIFIC      Section: 21      Qtr:SE  
 Symbol Type: POINT      Meridian: H  
 Radius: 80 meters      Elevation: 250 ft

Location: SOUTHERN HEADWATERS TRIBUTARY TO JANES CREEK, JUST EAST OF ARCATA.  
 Location Detail: LOCATED AT THE BASE OF A SLOPE IN A MINOR DRAINAGE.  
 Ecological: NEST TREE IS BROKEN-TOP, RESIDUAL OLD-GROWTH SNAG; SURROUNDING AREA CONSISTS OF 5-10 YEAR-OLD SECOND-GROWTH REDWOOD, GRAND FIR, SITKA SPRUCE, & RED ALDER, WITH DENSE SHRUB LAYER OF HUCKLEBERRY, SALMONBERRY, SWORD FERN, ETC. WHR: 4M REDWOOD.  
 Threat: THREATENED BY PROPOSED TIMBER HARVEST CONVERSION OF ADJACENT PROPERTY, FOLLOWED BY RESIDENTIAL HOUSING DEVELOPMENT.  
 General: 2 ADULTS OBSERVED TENDING NEST ON 12 JUNE 1995; NEST WAS LATER ABANDONED, PRESUMABLY DUE TO TIMBER HARVEST OPERATIONS IN WHAT IS NOW A RESIDENTIAL AREA.

Owner/Manager: PVT

— Sources —  
 CON95F0005      CONDON, WILLIAM (DFG-EUREKA). FIELD SURVEY FORM FOR PANDION HALIAETUS (NEST SITE). 1995-06-12.  
 CON95F0009      CONDON, WILLIAM (DFG-EUREKA). FIELD SURVEY FORM FOR PANDION HALIAETUS (NEST SITE). 1995-06-12.

California Department of Fish and Game  
Natural Diversity Database  
Full Report with Sources for Selected Occurrence

<b>Pandion haliaetus</b> osprey		Element Code: ABNKC01010	
<hr/> Status		NDDB Element Ranks	Other Lists
Federal: None		Global: G5	CDFG Status: SC
State: None		State: S3	
<hr/> <b>Habitat Associations</b> <hr/> <b>General:</b> OCEAN SHORE, BAYS, FRESH-WATER LAKES, AND LARGER STREAMS. <b>Micro:</b> LARGE NESTS BUILT IN TREE-TOPS WITHIN 15 MILES OF A GOOD FISH-PRODUCING BODY OF WATER.			

Occurrence No. 190      Map Index: 33511      EO Index: 29587      **Dates Last Seen**  
Occ Rank: Fair      Origin: Natural/Native occurrence      Element: 1995-XX-XX  
Presence: Presumed Extant      Trend: Unknown      Site: 1995-XX-XX  
Record Last Updated: 1996-10-22

Quad Summary: Arcata North (4012481/672A)

County Summary: Humboldt

Lat/Long: 40.88782° / -124.06438°

UTM: Zone-10 N4526849 E410331

Mapping Precision: SPECIFIC

Symbol Type: POINT

Radius: 80 meters

Township: 06N

Range: 01E

Section: 21      Qtr: SE

Meridian: H

Elevation: 350 ft

**Location:** NORTHERN TRIBUTARY TO JANES CREEK, EAST OF ARCATA.

**Location Detail:** NEST TREE IS LOCATED APPROXIMATELY 50 YARDS FROM JANES CREEK.

**Ecological:** NEST TREE IS A MULTI-TOPPED LIVE REDWOOD, ABOUT 200 FEET TALL; SURROUNDING HABITAT CONSISTS OF SECOND-GROWTH REDWOOD FOREST, WITH MINOR COMPONENTS OF DOUGLAS FIR, SITKA SPRUCE, AND RED ALDER. (WHR 4M)

**Threat:** THREATENED BY TIMBER HARVEST OPERATIONS.

**General:** NEST SITE REPORTEDLY OCCUPIED SINCE AT LEAST 1987, DESPITE DISTURBANCE FROM TIMBER OPERATIONS IN 1988, 1991, AND 1994.

Owner/Manager: PVT

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**Sources**

CON96F0002      CONDON, WILLIAM (DFG-EUREKA). FIELD SURVEY FORM FOR PANDION HALIAETUS (NEST SITE). 1996-01-XX.

California Department of Fish and Game  
Natural Diversity Database  
Full Report with Sources for Selected Occurrence

Pandion haliaetus osprey.	Element Code: ABNKC01010	
<hr/> Status _____	NDDB Element Ranks _____	Other Lists _____
Federal: None	Global: G5	CDFG Status: SC
State: None	State: S3	
<hr/> Habitat Associations _____		
General: OCEAN SHORE, BAYS, FRESH-WATER LAKES, AND LARGER STREAMS.		
Micro: LARGE NESTS BUILT IN TREE-TOPS WITHIN 15 MILES OF A GOOD FISH-PRODUCING BODY OF WATER.		

Occurrence No. 291      Map Index: 39606      EO Index: 34608      — Dates Last Seen —  
Occ Rank: Good      Element: 1998-05-19  
Origin: Natural/Native occurrence      Site: 1998-05-19  
Presence: Presumed Extant  
Trend: Unknown      Record Last Updated: 1998-09-01

Quad Summary: Arcata South (4012471/672D)  
County Summary: Humboldt

Lat/Long: 40.87395° / -124.03024°      Township: 06N  
UTM: Zone-10 N4525275 E413189      Range: 01E  
Mapping Precision: SPECIFIC      Section: 26      Qtr: SE  
Symbol Type: POINT      Meridian: H  
Radius: 80 meters      Elevation: 900 ft

Location: BETWEEN KELLY CREEK AND LEGGIT CREEK, ABOUT 2.5 MILES EAST OF ARCATA.  
Location Detail: THIS NEST WAS FOUND WHEN COMPARING THP MAPS OF NESTS WITH DFG MAPS.

Ecological:

Threat: THREATENED BY TIMBER HARVEST ACTIVITIES.  
General: EUREKA #045A. INACTIVE IN 1997. ACTIVE IN 1998.

Owner/Manager: UNKNOWN

Sources \_\_\_\_\_  
LOV98F0036      LOVERTI, VANESSA (DFG-R1). FIELD SURVEY FORM FOR PANDION HALIAETUS (NEST SITE). 1998-05-19.

California Department of Fish and Game  
Natural Diversity Database  
Full Report with Sources for Selected Occurrence

<b>Pandion haliaetus</b> osprey		Element Code: ABNKC01010
Status		NDDB Element Ranks
Federal: None State: None		Global: G5 State: S3
Other Lists CDFG Status: SC		
Habitat Associations		
General: OCEAN SHORE, BAYS, FRESH-WATER LAKES, AND LARGER STREAMS.		
Micro: LARGE NESTS BUILT IN TREE-TOPS WITHIN 15 MILES OF A GOOD FISH-PRODUCING BODY OF WATER.		

Occurrence No. 296      Map Index: 39626      EO Index: 34628      Dates Last Seen  
Occ Rank: Good      Element: 1998-07-16  
Origin: Natural/Native occurrence      Site: 1998-07-16  
Presence: Presumed Extant  
Trend: Unknown      Record Last Updated: 1998-09-03

Quad Summary: Arcata North (4012481/672A)  
County Summary: Humboldt

Lat/Long: 40.88900° / -124.04987°      Township: 06N  
UTM: Zone-10 N4526965 E411555      Range: 01E  
Mapping Precision:SPECIFIC      Section: 22      Qtr:SE  
Symbol Type: POINT      Meridian: H  
Radius: 80 meters      Elevation: 600 ft

Location: FICKLE HILL, WEST OF WEST END ROAD, NE OF ARCATA.  
Location Detail: NEST TREE IS VISIBLE FROM WILLOW ROAD AND ELISABETH ROAD.  
Ecological:  
Threat: THREATENED BY TIMBER HARVEST ACTIVITIES.  
General: EUREKA #040. ACTIVE IN 1998.  
Owner/Manager: UNKNOWN

Sources  
LOV98F0041      LOVERTI, VANESSA (DFG-R1). FIELD SURVEY FORM FOR PANDION HALIAETUS (NEST SITE). 1998-07-16.

California Department of Fish and Game  
Natural Diversity Database  
Full Report with Sources for Selected Occurrence

<b>Pandion haliaetus</b> osprey		Element Code: ABNK01010
Status		NDDB Element Ranks
Federal: None	Global: G5	Other Lists
State: None	State: S3	CDFG Status: SC
<b>Habitat Associations</b>		
General: OCEAN SHORE, BAYS, FRESH-WATER LAKES, AND LARGER STREAMS.		
Micro: LARGE NESTS BUILT IN TREE-TOPS WITHIN 15 MILES OF A GOOD FISH-PRODUCING BODY OF WATER.		

Occurrence No. 386      Map Index: 64218      EO Index: 64327      — Dates Last Seen —  
Occ Rank: Unknown      Element: 2005-XX-XX  
Origin: Natural/Native occurrence      Site: 2005-XX-XX  
Presence: Presumed Extant  
Trend: Unknown      Record Last Updated: 2006-03-14

Quad Summary: Arcata North (4012481/672A)  
County Summary: Humboldt

Lat/Long: 40.87624° / -124.03271°      Township: 06N  
UTM: Zone-10 N4525532 E412984      Range: 01E  
Mapping Precision:NON-SPECIFIC      Section: 26      Qtr: SE  
Symbol Type: POINT      Meridian: H  
Radius: 1/10 mile      Elevation: 450 ft

Location: UPPER END OF LEGGIT CREEK, 2.25 MILES WEST OF BLUE LAKE  
Location Detail: NRM OSPREY SITE 1. NEST TREE IS LOCATED IMMEDIATELY DOWNSLOPE OF HERON SITE 2.

Ecological: NEST TREE IS A LARGE SNAG. SURROUNDING HABITAT CONSISTS OF NORTH COAST CONIFEROUS FOREST, DOMINATED BY COAST REDWOOD, SITKA SPRUCE, DOUGLAS FIR, GRAND FIR, AND ASSOCIATED HARDWOODS.

Threat:

General: NEST HAS BEEN OCCUPIED ANNUALLY SINCE ITS DISCOVERY IN 2001, OCCUPIED 2001-2005.

Owner/Manager: PVT, NRM

Sources

EMB05F0006      EMBREE, DIRK AND GREG MANTEL (NRM CORP). FIELD SURVEY FORM FOR PANDION HALIETUS (NEST SITE). 2005-XX-XX.

California Department of Fish and Game  
Natural Diversity Database  
Full Report with Sources for Selected Occurrence

<b>Pandion haliaetus</b> osprey		Element Code: ABNKC01010
Status		NDDB Element Ranks
Federal: None		Global: G5
State: None		State: S3
<b>Habitat Associations</b>		
General: OCEAN SHORE, BAYS, FRESH-WATER LAKES, AND LARGER STREAMS.		
Micro: LARGE NESTS BUILT IN TREE-TOPS WITHIN 15 MILES OF A GOOD FISH-PRODUCING BODY OF WATER.		

Occurrence No. 388      Map Index: 64236      EO Index: 64331      Dates Last Seen  
Occ Rank: Unknown      Element: 2005-XX-XX  
Origin: Natural/Native occurrence      Site: 2005-XX-XX  
Presence: Presumed Extant  
Trend: Unknown      Record Last Updated: 2006-03-14

Quad Summary: Arcata North (4012481/672A)

County Summary: Humboldt

Lat/Long: 40.88119° / -124.04605°      Township: 06N  
UTM: Zone-10 N4526095 E411866      Range: 01E  
Mapping Precision: SPECIFIC      Section: 27      Qtr: NE  
Symbol Type: POINT      Meridian: H  
Radius: 80 meters      Elevation: 500 ft

Location: UPPER END OF AN UNNAMED TRIBUTARY TO WARREN CREEK, 2 MILES SW OF GLENDALE

Location Detail: NRM OSPREY SITE 3

Ecological: SURROUNDING HABITAT CONSISTS OF NORTH COAST CONIFEROUS FOREST, DOMINATED BY COAST REDWOOD AND DOUGLAS FIR.

Threat:

General: NEST DISCOVERED IN 2004; NEST OCCUPIED IN 2005.

Owner/Manager: PVT, NRM

Sources

EMB05F0008      EMBREE, DIRK AND GREG MANTEL (NRM CORP), FIELD SURVEY FORM FOR PANDION HALIETUS (NEST SITE).  
2005-XX-XX.

California Department of Fish and Game  
Natural Diversity Database  
Full Report with Sources for Selected Occurrence

Pandion haliaetus	Element Code: ABNKC01010
osprey	
Status	NDDB Element Ranks
Federal: None	Global: G5
State: None	State: S3
Habitat Associations	
General: OCEAN SHORE, BAYS, FRESH-WATER LAKES, AND LARGER STREAMS.	
Micro: LARGE NESTS BUILT IN TREE-TOPS WITHIN 15 MILES OF A GOOD FISH-PRODUCING BODY OF WATER.	

Occurrence No. 389      Map Index: 64238      EO Index: 64333      — Dates Last Seen —  
Occ Rank: Unknown      Element: 2005-XX-XX  
Origin: Natural/Native occurrence      Site: 2005-XX-XX  
Presence: Presumed Extant  
Trend: Unknown

Record Last Updated: 2006-03-14

Quad Summary: Arcata North (4012481/672A)

County Summary: Humboldt

Lat/Long: 40.88715° / -124.04403°      Township: 06N  
UTM: Zone-10 N4526754 E412044      Range: 01E  
Mapping Precision:SPECIFIC      Section: 22      Qtr: SE  
Symbol Type: POINT      Meridian: H  
Radius: 80 meters      Elevation: 280 ft

Location: ALONG UNNAMED TRIBUTARY TO WARREN CREEK, 1.7 MILES SW OF GLENDALE

Location Detail: NRM OSPREY SITE 4

Ecological: SURROUNDING HABITAT CONSISTS OF NORTH COAST CONIFEROUS FOREST, DOMINATED BY COAST REDWOOD, DOUGLAS FIR, AND ASSOCIATED HARDWOODS.

Threat:

General: ACTIVE NEST DISCOVERED IN 2005.

Owner/Manager: PVT, NRM

Sources

EMB05F0009      EMBREE, DIRK AND GREG MANTEL (NRM CORP). FIELD SURVEY FORM FOR PANDION HALIETUS (NEST SITE). 2005-XX-XX.

California Department of Fish and Game  
Natural Diversity Database  
Full Report with Sources for Selected Occurrence

<b>Pandion haliaetus</b> osprey	<b>Element Code:</b> ABNKC01010
<b>Status</b>	<b>NDDB Element Ranks</b>
<b>Federal:</b> None <b>State:</b> None	<b>Global:</b> G5 <b>State:</b> S3
<b>Habitat Associations</b>	
<b>General:</b> OCEAN SHORE, BAYS, FRESH-WATER LAKES, AND LARGER STREAMS.	
<b>Micro:</b> LARGE NESTS BUILT IN TREE-TOPS WITHIN 15 MILES OF A GOOD FISH-PRODUCING BODY OF WATER.	

**Occurrence No.** 390      **Map Index:** 64241      **EO Index:** 64336      **Dates Last Seen**  
**Occ Rank:** Unknown      **Element:** 2005-XX-XX  
**Origin:** Natural/Native occurrence      **Site:** 2005-XX-XX  
**Presence:** Presumed Extant  
**Trend:** Unknown

**Record Last Updated:** 2006-03-14

**Quad Summary:** Arcata North (4012481/672A)

**County Summary:** Humboldt

**Lat/Long:** 40.88525° / -124.03921°

**Township:** 06N

**UTM:** Zone-10 N4526539 E412448

**Range:** 01E

**Mapping Precision:** SPECIFIC

**Section:** 23      **Qtr:** SW

**Symbol Type:** POINT

**Meridian:** H

**Radius:** 80 meters

**Elevation:** 400 ft

**Location:** ALONG UNNAMED TRIBUTARY TO WARREN CREEK, 1.5 MILES SW OF GLENDALE

**Location Detail:** NRM OSPREY SITE 5

**Ecological:** SURROUNDING HABITAT CONSISTS OF NORTH COAST CONIFEROUS FOREST, DOMINATED BY COAST REDWOOD, DOUGLAS FIR, AND ASSOCIATED HARDWOODS; SLOPE 50-70%.

**Threat:**

**General:** ACTIVE NEST DISCOVERED IN SPRING 2005, ALTHOUGH IT WAS LATER VACANT (POSSIBLE FAILURE).

**Owner/Manager:** PVT, NRM

**Sources**

EMB05F0010      EMBREE, DIRK AND GREG MANTEL (NRM CORP). FIELD SURVEY FORM FOR PANDION HALIETUS (NEST SITE).  
2005-XX-XX.

California Department of Fish and Game  
Natural Diversity Database  
Full Report with Sources for Selected Occurrence

<b>Rhyacotriton variegatus</b> southern torrent salamander		Element Code: AAAAJ01020
Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G3G4	CDFG Status: SC
State: None	State: S2S3	
<b>Habitat Associations</b>		
<b>General:</b> COASTAL REDWOOD, DOUGLAS-FIR, MIXED CONIFER, MONTANE RIPARIAN, AND MONTANE HARDWOOD-CONIFER HABITATS, OLD GROWTH FOREST.		
<b>Micro:</b> COLD, WELL-SHADED, PERMANENT STREAMS AND SEEPAGES, OR WITHIN SPLASH ZONE OR ON MOSS-COVERED ROCK WITHIN TRICKLING WATER.		

Occurrence No. 85      Map Index: 24055      EO Index: 7097      — Dates Last Seen —  
Occ Rank: Unknown      Element: XXXX-XX-XX  
Origin: Natural/Native occurrence      Site: XXXX-XX-XX  
Presence: Presumed Extant  
Trend: Unknown

Record Last Updated: 1996-01-04

Quad Summary: Arcata North (4012481/672A), Arcata South (4012471/672D)

County Summary: Humboldt

Lat/Long: 40.87524° / -124.06541°

Township: 06N

UTM: Zone-10 N4525454 E410228

Range: 01E

Mapping Precision:NON-SPECIFIC

Section: 28      Qtr:XX

Symbol Type: POINT

Meridian: H

Radius: 2/5 mile

Elevation: 400 ft

Location: ARCATA COMMUNITY FOREST, IMMEDIATELY EAST OF HUMBOLDT STATE UNIVERSITY.

Location Detail: SPECIES FOUND IN UNIDENTIFIED SMALL CREEKS WITHIN THE ARCATA COMMUNITY FOREST.

Ecological:

Threat:

General: SPECIES REPORTED BY D. WATERS IN PERSONAL COMMUNICATION TO H. WELSH. NO DATE OF OCCURRENCE GIVEN.

Owner/Manager: CITY OF ARCATA

— Sources —

WEL87U0001      WELSH, H., JR. PETITION TO THE CALIFORNIA FISH AND GAME COMMISSION TO LIST THE OLYMPIC SALAMANDER AS STATE THREATENED. 1987-11-10.

# PROOF OF PUBLICATION

(2015.5 C.C.P.)

This space is for the County Clerk's Filing Stamp

## STATE OF CALIFORNIA

County of Humboldt

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-mentioned matter. I am the principal clerk of the printer of THE TIMES-STANDARD, a newspaper of general circulation, printed and published daily in the City of Eureka, County of Humboldt, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Humboldt, State of California, under the date of June 15, 1967, Consolidated Case Numbers 27009 and 27010; that the notice, of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates,

to-wit,

January 30

All in the year 2008

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at Eureka, California,

this 30th day of January, 2008

Shelma M. Garland

Signature

Proof of Publication of

## PUBLIC NOTICE

### PUBLIC NOTICE

A Timber Harvest Plan (THP) is being prepared approximately 1/4 mile northeast of the community of Sunny Brae, Arcata in the N 1/2 of Section 34, Township 6 North, Range 1 East, Humboldt County, HB&M. The THP area contains un-named tributaries to Grotzman Creek. If you are aware of a domestic water supply that comes directly from the described watercourse within 1,000 feet downstream of the named harvest location, please contact Chris Carroll within 10 days of the publication of this notice at: 375-1144.

Timberland Resource  
Consultants  
165 South Fortuna  
Blvd, Suite 4  
Fortuna, CA 95540  
1/30



FILED 1/27/08

165 South Fortuna Boulevard, Fortuna, CA 95540

707-725-1897 • fax 707-725-0972

trc@timberlandresource.com

February 12, 2008

ANDREW & DENISE ISAAC  
503-271-018-000  
1355 FICKLE HILL ROAD  
ARCATA, CA 95521

DEAR ANDREW & DENISE ISAAC:

SUBJECT: SCHMIDBAUER THP • DOMESTIC WATER INQUIRY

As the Registered Professional Forester preparing a Timber Harvest Plan (THP) for George Schmidbauer, I am required by the California Forest Practice Rules to request that you advise me of any domestic water supply intakes located on your property within 1,000 feet of the proposed THP boundary.

The proposed THP is approximately ¼ mile northeast of the community of Sunny Brae, Arcata in the N ½ of Section 34, Township 6 North, Range 1 East, Humboldt County, HB&M. The THP area contains un-named tributaries to Grotzman Creek. The THP area is located on the Arcata South 7.5' USGS Quadrangle.

The regulations require that you be provided 10 days from the receipt of this letter to respond. Please mail your response, if any to the above address on the letterhead.

Sincerely,

Chris Carroll, RPF #2628

Timberland Resource Consultants

Andrew and Denise Isaac  
1355 Fickle Hill Rd  
Arcata CA 95521  
707-822-2391 or 707-616-3581

Chris Carroll  
Timberland Resource Consultants  
165 South Fortuna Boulevard  
Fortuna CA 95540

Feb 20, 2008

Re: Schmidbauer THP

Dear Mr. Carroll

We received your letter of February 12 requesting information on water supply sources on Friday.

Our sole source of domestic water is a surface well located just west of the Schmidbauer's property line with the Turners, near the northwest corner of the proposed timber area.

This well is downslope of and within 1000 feet of part of the logging area.

On February 4, my brother went out to see who was parked on our property, and talked to two men from your company. He showed them where the well and the pipe and electric lines to our house are and where they cross under the road in a culvert.

The well is actually on the Turners' property, and its exact location is documented by several recorded easements.

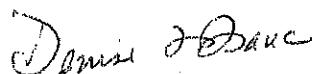
We are particularly concerned about erosion and about changes to the upslope vegetation. In late 1997, the area just north of the Schmidbauers, on land at that time owned by Mottaz (now Morse?), was logged and the flat area was apparently used as a landing area. Our well silted up, and our pump impeller had to be replaced.

In addition, the mountain bikers and the runners have used the old logging trail, which crosses the Schmidbauer land, and the areas under the PGE lines, as playgrounds, resulting in further erosion and slipouts. They have hacked out a new path under the power line from Fickle Hill down to the logging trail which produces further erosion.

We would also be concerned about any equipment or logging trucks using this area because of the introduction of gas, oil, and other ground and airborne pollutants.

Thank you for your consideration in this matter.

Sincerely,



Denise Isaac



165 South Fortuna Boulevard, Fortuna, CA 95540

707-725-1897 • fax 707-725-0972

trc@timberlandresource.com

January 31, 2008

DAVID & MYRNA TURNER  
503-111-021-000  
127 DEL MAR VISTA  
ARCATA CA 95521

DEAR DAVID & MYRNA TURNER:

SUBJECT: SCHMIDBAUER THP • DOMESTIC WATER INQUIRY

As the Registered Professional Forester preparing a Timber Harvest Plan (THP) for George Schmidbauer, I am required by the California Forest Practice Rules to request that you advise me of any domestic water supply intakes located on your property within 1,000 feet of the proposed THP boundary.

The proposed THP is approximately ¼ mile northeast of the community of Sunny Brae, Arcata in the N ½ of Section 34, Township 6 North, Range 1 East, Humboldt County, HB&M. The THP area contains un-named tributaries to Grotzman Creek. The THP area is located on the Arcata South 7.5' USGS Quadrangle.

The regulations require that you be provided 10 days from the receipt of this letter to respond. Please mail your response, if any to the above address on the letterhead.

Sincerely,

Chris Carroll, RPF #2628  
Timberland Resource Consultants

Unit RPF  
2-21-08  
m

Feb 16, 2008

David & Myrna Turner  
127 Del Mar Vista  
Arcata, CA 95521

Mr. Chris Carroll  
Timberland Resource Consultants  
165 South Fortuna Blvd  
Fortuna, CA 95540

THP #503-111-021-000; Schmidbauer THP; Domestic Water Inquiry

Due to an out-of-town trip, we are just responding to your notification, regarding the above THP. Per attached map, we share a border with said property, THP, and water inquiry.

We are notifying you of some major concerns that need to be addressed as our water, property, and, therefore, lives, could be seriously impacted by the proposed THP.

Water:

— Our water supply is fed by surface water from surrounding areas. We have two 'domestic water intakes,' or wells on our property. Both are situated close to Del Mar Vista Road (DMVR). We just invested major dollars in an efficient water system, storage water tanks, and are very concerned our water access, quantity, and quality will be impacted. Also, our neighbor's (Isaac's) water access/wells are also on our property, and are very close to said property boundary. (Therefore, some concerns and issues to address prior to start of proposed logging = watershed / intake / course protection, sediment and drainage/deposits during/after logging, erosion, and preventative measures, etc).

Road:

— Will DMVR be used for access to said THP/logging? This is also a huge concern, as it is a steep, narrow, dirt, gravel, road that requires yearly maintenance - at an also steep expense. There is fear of wear, tear, damage, erosion, liability, others' use of logging trails, traffic (narrow road with not much allowance for 2-way traffic), blockage, and, we (neighbors) are remembering the probable damage and expense due to previous logging. (Therefore, some concerns and issues to address prior to start of proposed logging = wear, tear, damage, widening, maintenance and repair, drainage, culverts, hours for access/use, costs/deposit for unexpected problems, preventative measures, and assurance for repair of road to A+ condition, etc).

Environment:

— Appearance? Clear-cutting? Pollution? Noise? Additional traffic? Watershed/course/path preservation? Logging trail/s? Drainage? Landslides?

As you can see, there are numerous issues, questions, and concerns that need to be addressed. Would you please forward me a copy of the THP when available? Thank you for your time and attention to this matter.

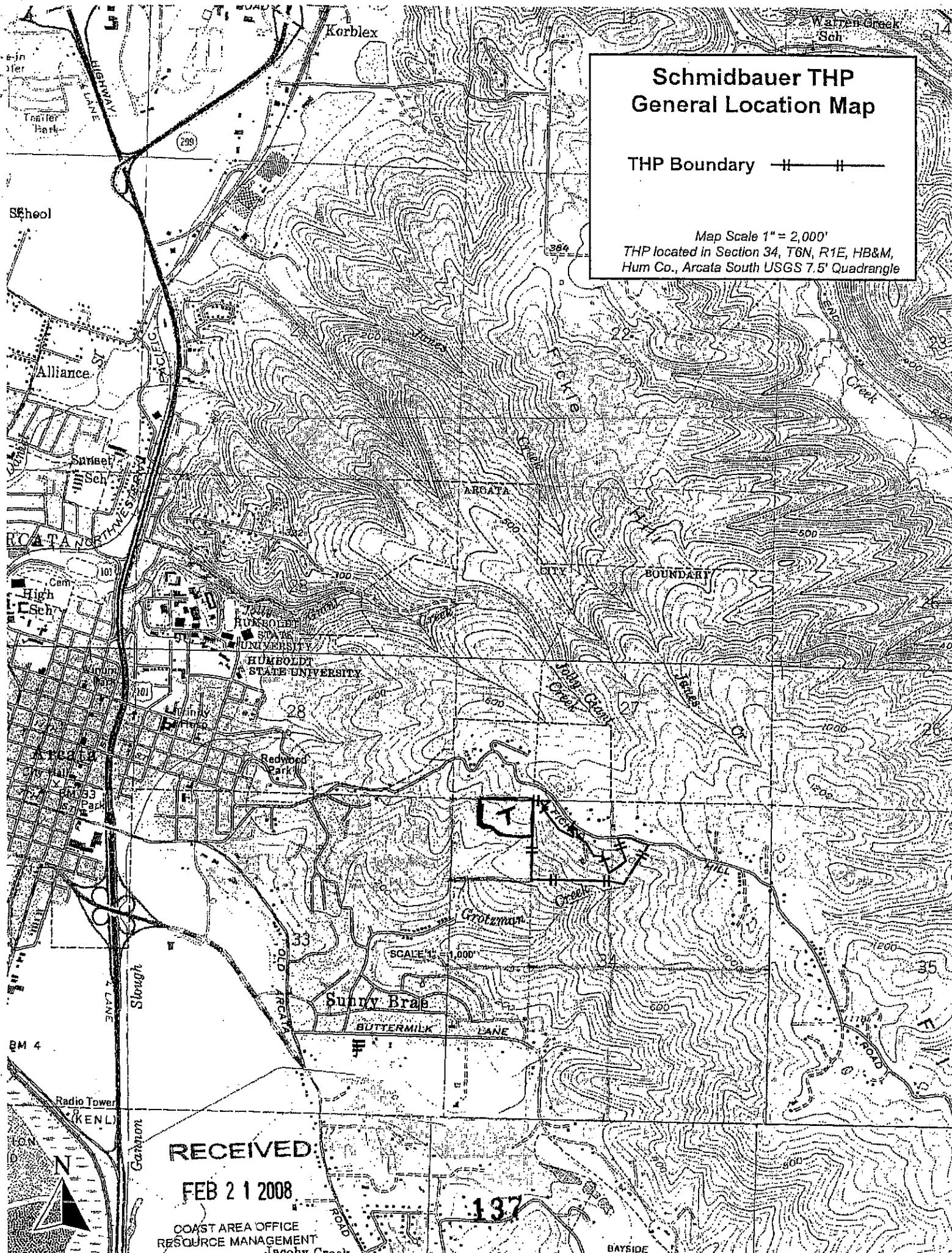
Sincerely, *Myrna Turner*

Cc: Dept of Forestry Dept of Fish/Game, Geological Service, Water Quality Control Board,  
Arcata City Environmental, DMVR Homeowners Asso

RECEIVED

FEB 21 2008

COAST AREA OFFICE  
RESOURCE MANAGEMENT



## Schmidbauer THP General Location Map

THP Boundary

Map Scale 1" = 2,000'  
THP located in Section 34, T6N, R1E, HB&M,  
Hum Co., Arcata South USGS 7.5' Quadrangle

RECEIVED

FEB 21 2008

COAST AREA OFFICE  
RESOURCE MANAGEMENT

137

BAYSIDE



165 South Fortuna Boulevard, Fortuna, CA 95540

707-725-1897 • fax 707-725-0972

trc@timberlandresource.com

February 12, 2008

DAVID & LAURA FRISK  
503-111-032-000  
767 ORPHEUS  
ENCINITAS CA 92024

DEAR DAVID & LAURA FRISK:

SUBJECT: SCHMIDBAUER THP • DOMESTIC WATER INQUIRY

As the Registered Professional Forester preparing a Timber Harvest Plan (THP) for George Schmidbauer, I am required by the California Forest Practice Rules to request that you advise me of any domestic water supply intakes located on your property within 1,000 feet of the proposed THP boundary.

The proposed THP is approximately ¼ mile northeast of the community of Sunny Brae, Arcata in the N ½ of Section 34, Township 6 North, Range 1 East, Humboldt County, HB&M. The THP area contains un-named tributaries to Grotzman Creek. The THP area is located on the Arcata South 7.5' USGS Quadrangle.

The regulations require that you be provided 10 days from the receipt of this letter to respond. Please mail your response, if any to the above address on the letterhead.

Sincerely,

A handwritten signature in black ink that reads "Chris Carroll".

Chris Carroll, RPF #2628  
Timberland Resource Consultants

TRC

---

**From:** Laura Frisk [laurafrisk@cox.net]  
**Sent:** Monday, February 11, 2008 5:23 PM  
**To:** trc@timberlandresource.com  
**Subject:** Fw: Frisk Arcata Property

Dear Mr. Carol,

I was informed by a phone call from Paul Hyman this evening, Saturday, February 9, 2008, that the George Schmidbauer property, which is on the east side of my property, is filing a timber harvest plan, but that details of this plan are not yet given.

I want to make it clearly known that my only water source could be greatly impacted by this harvest plan. A dry-weather water report, by Walter Sweet, Civil Engineer, on October 9, 1991, states the fact that this creek runs year round and is the main water source for my property. I have gone to great expense developing this water source and without it my property would be of no value. My water source is at the least less than 1000 feet, and could possibly be less than only 500 feet from harvest plan.

I have received no notice or notification as of this time. (Except for the phone call from Paul Hyman, a neighbor of mine on Fickle Hill.) I will need to be informed and also meet with TRC, DCF, Fish and Game, and George Schmidbauer's representatives. I will be following up this email with phone calls on Monday, February 11, and also sending this letter certified mail. With the certified letter, I will be enclosing two maps showing the location of my property and the location of the creek.

I will be emailing two maps under separate email.

I would appreciate your attention to this matter and look forward to speaking with you.

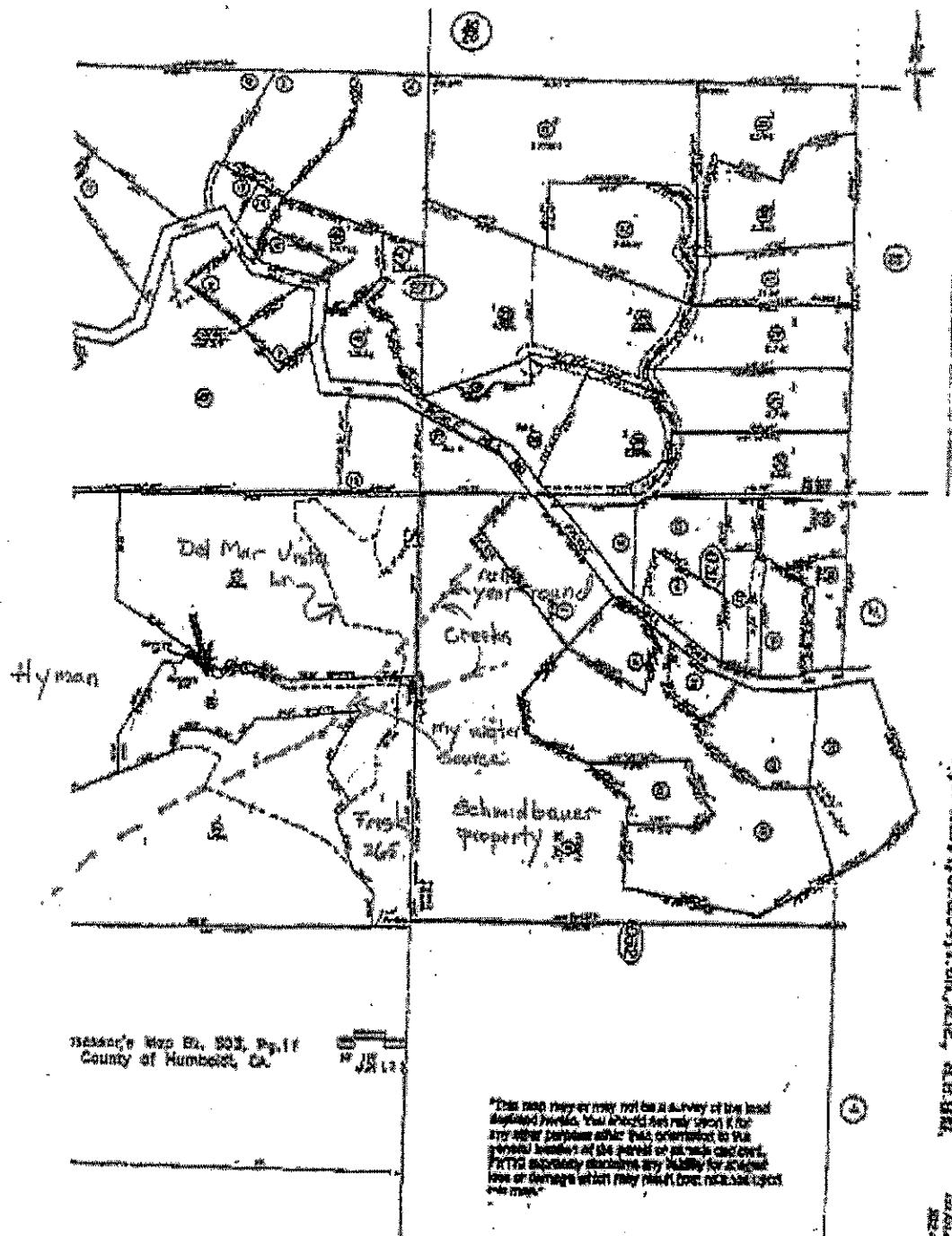
My property address in Arcata:  
265 Del Mar Vista Lane, Arcata, CA.

My mailing address, and permanent residence as of now:  
767 Orpheus Avenue, Encinitas, CA 92024  
Phone: 760-635-3872  
Fax: 760-635-3877  
Email: davidfrisk@cox.net

Sincerely,  
David Frisk

3/2 OF SUBD. SEC. 27, TCH, RIE, HUMB

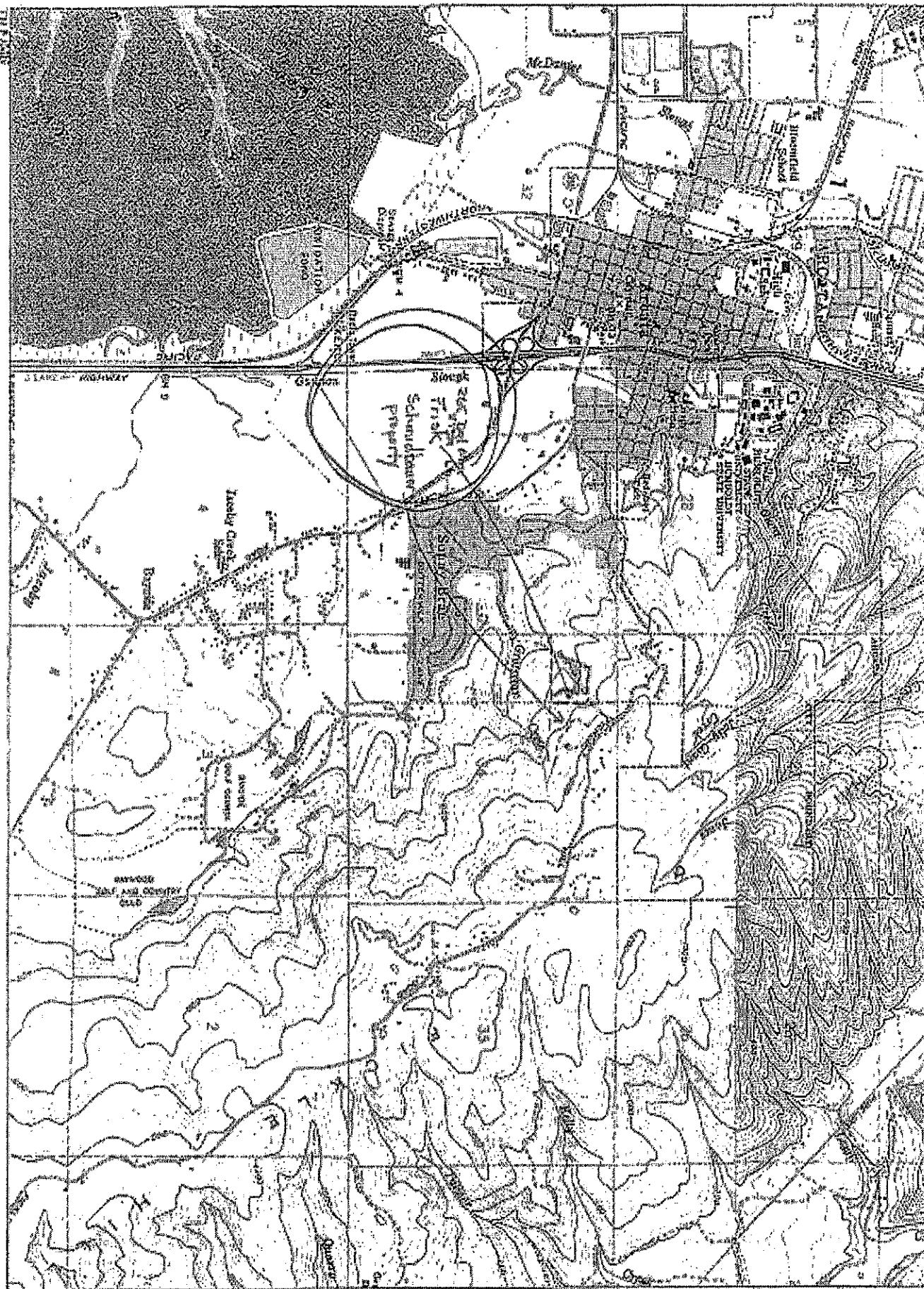
603-27



From David Frost  
245 Del Mar Units 3.

From David Tracy

They reacted with TURBO 3000 (Musical Computer) (www.musicalcomputer.com) (www.musicalcomputer.com).





165 South Fortuna Boulevard, Fortuna, CA 95540

707-725-1897 • fax 707-725-0972

trc@timberlandresource.com

January 31, 2008

STEPHEN BRUSCA  
503-111-034-000  
325 DE MAR VISTA LN  
ARCATA CA 95521

DEAR STEPHEN BRUSCA:

SUBJECT: SCHMIDBAUER THP • DOMESTIC WATER INQUIRY

As the Registered Professional Forester preparing a Timber Harvest Plan (THP) for George Schmidbauer, I am required by the California Forest Practice Rules to request that you advise me of any domestic water supply intakes located on your property within 1,000 feet of the proposed THP boundary.

The proposed THP is approximately ¼ mile northeast of the community of Sunny Brae, Arcata in the N ½ of Section 34, Township 6 North, Range 1 East, Humboldt County, HB&M. The THP area contains un-named tributaries to Grotzman Creek. The THP area is located on the Arcata South 7.5' USGS Quadrangle.

The regulations require that you be provided 10 days from the receipt of this letter to respond. Please mail your response, if any to the above address on the letterhead.

Sincerely,

Chris Carroll, RPF #2628  
Timberland Resource Consultants



165 South Fortuna Boulevard, Fortuna, CA 95540

707-725-1897 • fax 707-725-0972

trc@timberlandresource.com

January 31, 2008

EDITH STROMBERG  
503-081-012-000  
PO BX 358  
ARCATA CA 95518

DEAR EDITH STROMBERG:

SUBJECT: SCHMIDBAUER THP • DOMESTIC WATER INQUIRY

As the Registered Professional Forester preparing a Timber Harvest Plan (THP) for George Schmidbauer, I am required by the California Forest Practice Rules to request that you advise me of any domestic water supply intakes located on your property within 1,000 feet of the proposed THP boundary.

The proposed THP is approximately ¼ mile northeast of the community of Sunny Brae, Arcata in the N ½ of Section 34, Township 6 North, Range 1 East, Humboldt County, HB&M. The THP area contains un-named tributaries to Grotzman Creek. The THP area is located on the Arcata South 7.5' USGS Quadrangle.

The regulations require that you be provided 10 days from the receipt of this letter to respond. Please mail your response, if any to the above address on the letterhead.

Sincerely,

Chris Carroll, RPF #2628  
Timberland Resource Consultants



165 South Fortuna Boulevard, Fortuna, CA 95540

707-725-1897 • fax 707-725-0972

trc@timberlandresource.com

January 31, 2008

PAUL & LOIS HYMAN  
503-111-020-000  
400 DEL MAR VISTA LN  
ARCATA CA 95521

DEAR PAUL & LOIS HYMAN:

SUBJECT: SCHMIDBAUER THP • DOMESTIC WATER INQUIRY

As the Registered Professional Forester preparing a Timber Harvest Plan (THP) for George Schmidbauer, I am required by the California Forest Practice Rules to request that you advise me of any domestic water supply intakes located on your property within 1,000 feet of the proposed THP boundary.

The proposed THP is approximately ¼ mile northeast of the community of Sunny Brae, Arcata in the N ½ of Section 34, Township 6 North, Range 1 East, Humboldt County, HB&M. The THP area contains un-named tributaries to Grotzman Creek. The THP area is located on the Arcata South 7.5' USGS Quadrangle.

The regulations require that you be provided 10 days from the receipt of this letter to respond. Please mail your response, if any to the above address on the letterhead.

Sincerely,

Chris Carroll, RPF #2628  
Timberland Resource Consultants



165 South Fortuna Boulevard, Fortuna, CA 95540

707-725-1897 • fax 707-725-0972

trc@timberlandresource.com

January 31, 2008

ERIC & MAUREEN BRUNDAGE  
503-271-043-000  
4333 DOWS PRAIRIE RD  
MCKINLEYVILLE CA 95519

DEAR ERIC & MAUREEN BRUNDAGE:

SUBJECT: SCHMIDBAUER THP • DOMESTIC WATER INQUIRY

As the Registered Professional Forester preparing a Timber Harvest Plan (THP) for George Schmidbauer, I am required by the California Forest Practice Rules to request that you advise me of any domestic water supply intakes located on your property within 1,000 feet of the proposed THP boundary.

The proposed THP is approximately ¼ mile northeast of the community of Sunny Brae, Arcata in the N ½ of Section 34, Township 6 North, Range 1 East, Humboldt County, HB&M. The THP area contains un-named tributaries to Grotzman Creek. The THP area is located on the Arcata South 7.5' USGS Quadrangle.

The regulations require that you be provided 10 days from the receipt of this letter to respond. Please mail your response, if any to the above address on the letterhead.

Sincerely,

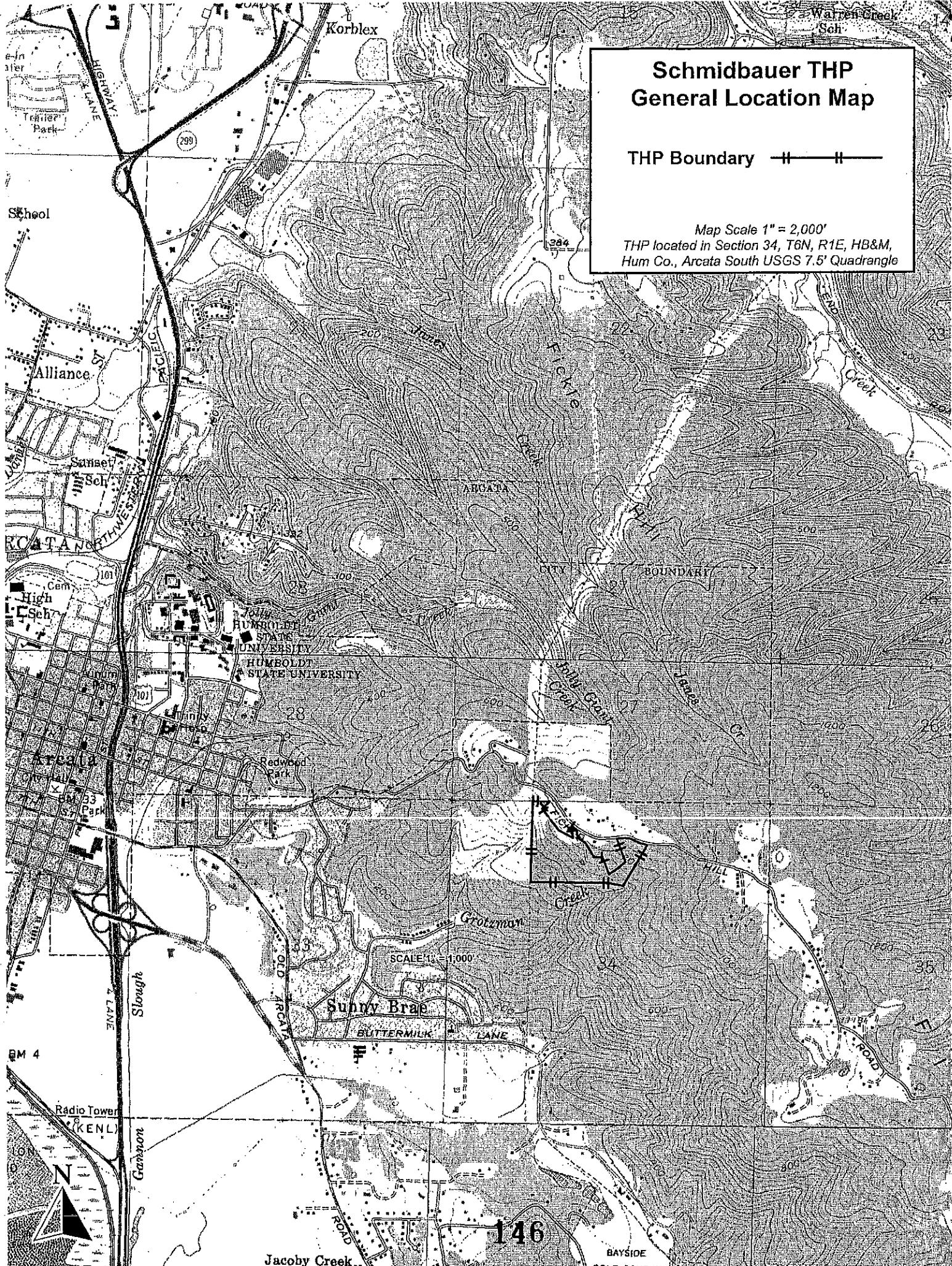
A handwritten signature in cursive script that appears to read "Chris Carroll".

Chris Carroll, RPF #2628  
Timberland Resource Consultants

## Schmidbauer THP General Location Map

THP Boundary

Map Scale 1" = 2,000'  
THP located in Section 34, T6N, R1E, HB&M,  
Hum Co., Arcata South USGS 7.5' Quadrangle



FILE COPY



165 South Fortuna Boulevard, Fortuna, CA 95540

707-725-1897 • fax 707-725-0972

trc@timberlandresource.com

September 12, 2008

John L. & Margret Tilstra  
PO BOX 3108  
Collegedale TN 37315

SUBJECT: SCHMIDBAUER THP

This letter is to inform you that you are being listed as an additional Timberland Owner on a THP being submitted by Redwood Forest Products. You are being listed as an additional timberland owner because timber operations are proposed to occur on property owned by you in the form of the use of approximately 500 feet of existing skid trail. Additionally an existing seasonal road and an existing landing are proposed for use.

I am also required by the Forest Practice Rules to notify you of the responsibilities as listed Timberland Owner as follows:

TIMBERLAND OWNER'S RESPONSIBILITIES

The forest practice rules require that the Licensed Timber Operator listed on the THP (to be amended) be responsible for the proper construction, inspection, and maintenance of erosion controls during the prescribed maintenance period until the work completion report is approved by CDF (see rules below). Thereafter, the rules require that the Timberland Owner (you) be responsible for inspection and any needed repair and maintenance of erosion controls along the roads and associated landing on your property during the remainder of the prescribed maintenance period which lasts three years.

923.4 Road Maintenance

Logging roads, landings, and associated drainage structures used in a timber operation shall be maintained in a manner which minimizes concentration of runoff, soil erosion, and slope instability and which prevents degradation of the quality and beneficial uses of water during timber operations and throughout the prescribed maintenance period. In addition those roads, which are used in connection with stocking activities, shall be maintained throughout their use even if this is beyond the prescribed maintenance period.

1050 Erosion Control Maintenance

(a) Where necessary to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water, the department may require that erosion controls be maintained prior to the beginning of a winter period and prior to filing of a work completion report.

- (b) The Director may deem completion report as described in PRC 4585 to have been filed upon the date of receipt if the department finds that all erosion controls have been constructed and maintained in compliance with the Forest Practice Rules upon the first inspection after receipt of the completion report. Otherwise, the Director shall accept a work completion report for filing only after the department finds that all erosion controls have been constructed in compliance with the Forest Practice Rules.
- (c) The LTO is responsible for proper construction, inspection and maintenance of erosion control during the prescribed maintenance period until the work completion report as described in PRC 4585 is approved by the Director. The landowner is responsible for inspection and any needed repair and maintenance of erosion controls during the remainder of the prescribed maintenance period. Responsibility for erosion control maintenance may be assumed at an earlier date by the landowner or can be delegated to a third party, provided that the assuming party acknowledges such responsibility in writing to the Director.
- (d) Upon approving a work completion report, the Director may prescribe a maintenance period which extends for as much as three years after filing the work completion report based on physical evidence (such as location of erosion controls in disturbed areas with high or extreme erosion hazard, on steep or unstable slopes, or within or adjacent to the standard width of a water course or lake protection zone) that erosion controls need to be maintained for the extended maintenance period in order to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water.
- (e) After approving the work completion report, the Director may extend the prescribed maintenance period for as much as three years after filing of the work completion report if subsequent inspections by the department during the prescribed maintenance period show that erosion controls have failed or are likely to fail to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water.

Lastly, the plan submitter has retained the services of an RPF to provide professional advice to the LTO and timberland owners 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.

Sincerely,



Nick Robinson for:  
Chris Carroll, RPF #2628  
Timberland Resource Consultants



165 South Fortuna Boulevard, Fortuna, CA 95540

707-725-1897 • fax 707-725-0972

[trc@timberlandresource.com](mailto:trc@timberlandresource.com)

September 22, 2008

Clayton R & Natal Chadwell  
1981 Fickle Hill Road  
Arcata, CA 95521

**SUBJECT: SCHMIDBAUER THP**

This letter is to inform you that you are being listed as an additional Timberland Owner on a THP being submitted by George Schmidbauer. You are being listed as an additional timberland owner because timber operations are proposed to occur on property owned by you in the form of the use of an existing landing.

I am also required by the Forest Practice Rules to notify you of the responsibilities as listed Timberland Owner as follows:

**TIMBERLAND OWNER'S RESPONSIBILITIES**

The forest practice rules require that the Licensed Timber Operator listed on the THP (to be amended) be responsible for the proper construction, inspection, and maintenance of erosion controls during the prescribed maintenance period until the work completion report is approved by CDF (see rules below). Thereafter, the rules require that the Timberland Owner (you) be responsible for inspection and any needed repair and maintenance of erosion controls along the roads and associated landing on your property during the remainder of the prescribed maintenance period which lasts three years.

**923.4 Road Maintenance**

Logging roads, landings, and associated drainage structures used in a timber operation shall be maintained in a manner which minimizes concentration of runoff, soil erosion, and slope instability and which prevents degradation of the quality and beneficial uses of water during timber operations and throughout the prescribed maintenance period. In addition those roads, which are used in connection with stocking activities, shall be maintained throughout their use even if this is beyond the prescribed maintenance period.

**1050 Erosion Control Maintenance**

- (a) Where necessary to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water, the department may require that erosion controls be maintained prior to the beginning of a winter period and prior to filing of a work completion report.
- (b) The Director may deem completion report as described in PRC 4585 to have been filed upon the date of receipt if the department finds that all erosion controls have been constructed and

maintained in compliance with the Forest Practice Rules upon the first inspection after receipt of the completion report. Otherwise, the Director shall accept a work completion report for filing only after the department finds that all erosion controls have been constructed in compliance with the Forest Practice Rules.

(c) The LTO is responsible for proper construction, inspection and maintenance of erosion control during the prescribed maintenance period until the work completion report as described in PRC 4585 is approved by the Director. The landowner is responsible for inspection and any needed repair and maintenance of erosion controls during the remainder of the prescribed maintenance period. Responsibility for erosion control maintenance may be assumed at an earlier date by the landowner or can be delegated to a third party, provided that the assuming party acknowledges such responsibility in writing to the Director.

(d) Upon approving a work completion report, the Director may prescribe a maintenance period which extends for as much as three years after filing the work completion report based on physical evidence (such as location of erosion controls in disturbed areas with high or extreme erosion hazard, on steep or unstable slopes, or within or adjacent to the standard width of a water course or lake protection zone) that erosion controls need to be maintained for the extended maintenance period in order to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water.

(e) After approving the work completion report, the Director may extend the prescribed maintenance period for as much as three years after filing of the work completion report if subsequent inspections by the department during the prescribed maintenance period show that erosion controls have failed or are likely to fail to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water.

Lastly, the plan submitter has retained the services of an RPF to provide professional advice to the LTO and timberland owners 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.

Sincerely,



Chris Carroll, RPF #2628  
Timberland Resource Consultants



FILE COPY

165 South Fortuna Boulevard, Fortuna, CA 95540

707-725-1897 • fax 707-725-0972

trc@timberlandresource.com

October 3, 2008

City of Arcata  
737 F Street  
Arcata, CA 95518

SUBJECT: SCHMIDBAUER THP

This letter is to inform you that you are being listed as an additional Timberland Owner on a THP being submitted by George Schmidbauer. You are being listed as an additional timberland owner because timber operations are proposed to occur on property owned by you in the form of the installation of drainage structures and facilities on an existing seasonal road. Additionally a landing is proposed for construction which is split by the City of Arcata and Schmidbauers' property.

I am also required by the Forest Practice Rules to notify you of the responsibilities as listed Timberland Owner as follows:

#### TIMBERLAND OWNER'S RESPONSIBILITIES

The forest practice rules require that the Licensed Timber Operator listed on the THP (to be amended) be responsible for the proper construction, inspection, and maintenance of erosion controls during the prescribed maintenance period until the work completion report is approved by CDF (see rules below). Thereafter, the rules require that the Timberland Owner (you) be responsible for inspection and any needed repair and maintenance of erosion controls along the roads and associated landing on your property during the remainder of the prescribed maintenance period which lasts three years.

#### 923.4 Road Maintenance

Logging roads, landings, and associated drainage structures used in a timber operation shall be maintained in a manner which minimizes concentration of runoff, soil erosion, and slope instability and which prevents degradation of the quality and beneficial uses of water during timber operations and throughout the prescribed maintenance period. In addition those roads, which are used in connection with stocking activities, shall be maintained throughout their use even if this is beyond the prescribed maintenance period.

#### 1050 Erosion Control Maintenance

(a) Where necessary to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water, the department may require that erosion controls be maintained prior to the beginning of a winter period and prior to filing of a work completion report.

(b) The Director may deem completion report as described in PRC 4585 to have been filed upon the date of receipt if the department finds that all erosion controls have been constructed and maintained in compliance with the Forest Practice Rules upon the first inspection after receipt of the completion report. Otherwise, the Director shall accept a work completion report for filing only after the department finds that all erosion controls have been constructed in compliance with the Forest Practice Rules.

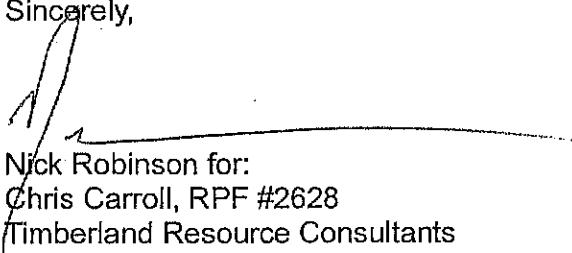
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(d) Upon approving a work completion report, the Director may prescribe a maintenance period which extends for as much as three years after filing the work completion report based on physical evidence (such as location of erosion controls in disturbed areas with high or extreme erosion hazard, on steep or unstable slopes, or within or adjacent to the standard width of a water course or lake protection zone) that erosion controls need to be maintained for the extended maintenance period in order to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water.

(e) After approving the work completion report, the Director may extend the prescribed maintenance period for as much as three years after filing of the work completion report if subsequent inspections by the department during the prescribed maintenance period show that erosion controls have failed or are likely to fail to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water.

Lastly, the plan submitter has retained the services of an RPF to provide professional advice to the LTO and timberland owners 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.

Sincerely,

  
Nick Robinson for:  
Chris Carroll, RPF #2628  
Timberland Resource Consultants



165 South Fortuna Boulevard, Fortuna, CA 95540

707-725-1897 • fax 707-725-0972

[trc@timberlandresource.com](mailto:trc@timberlandresource.com)

November 6, 2008

Robert E. & Carol Morris  
39960 Alderpoint RD  
Blocksburg CA 95514

SUBJECT: SCHMIDBAUER THP

This letter is to inform you that you are being listed as an additional Timberland Owner on a THP being submitted by George Schmidbauer. You are being listed as an additional timberland owner because timber operations are proposed to occur on property owned by you in the form of the installation of drainage structures and facilities on an existing seasonal road.

I am also required by the Forest Practice Rules to notify you of the responsibilities as listed Timberland Owner as follows:

#### TIMBERLAND OWNER'S RESPONSIBILITIES

The forest practice rules require that the Licensed Timber Operator listed on the THP (to be amended) be responsible for the proper construction, inspection, and maintenance of erosion controls during the prescribed maintenance period until the work completion report is approved by CDF (see rules below). Thereafter, the rules require that the Timberland Owner (you) be responsible for inspection and any needed repair and maintenance of erosion controls along the roads and associated landing on your property during the remainder of the prescribed maintenance period which lasts three years.

#### 923.4 Road Maintenance

Logging roads, landings, and associated drainage structures used in a timber operation shall be maintained in a manner which minimizes concentration of runoff, soil erosion, and slope instability and which prevents degradation of the quality and beneficial uses of water during timber operations and throughout the prescribed maintenance period. In addition those roads, which are used in connection with stocking activities, shall be maintained throughout their use even if this is beyond the prescribed maintenance period.

#### 1050 Erosion Control Maintenance

- (a) Where necessary to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water, the department may require that erosion controls be maintained prior to the beginning of a winter period and prior to filing of a work completion report.
- (b) The Director may deem completion report as described in PRC 4585 to have been filed upon the date of receipt if the department finds that all erosion controls have been constructed and

maintained in compliance with the Forest Practice Rules upon the first inspection after receipt of the completion report. Otherwise, the Director shall accept a work completion report for filing only after the department finds that all erosion controls have been constructed in compliance with the Forest Practice Rules.

(c) The LTO is responsible for proper construction, inspection and maintenance of erosion control during the prescribed maintenance period until the work completion report as described in PRC 4585 is approved by the Director. The landowner is responsible for inspection and any needed repair and maintenance of erosion controls during the remainder of the prescribed maintenance period. Responsibility for erosion control maintenance may be assumed at an earlier date by the landowner or can be delegated to a third party, provided that the assuming party acknowledges such responsibility in writing to the Director.

(d) Upon approving a work completion report, the Director may prescribe a maintenance period which extends for as much as three years after filing the work completion report based on physical evidence (such as location of erosion controls in disturbed areas with high or extreme erosion hazard, on steep or unstable slopes, or within or adjacent to the standard width of a water course or lake protection zone) that erosion controls need to be maintained for the extended maintenance period in order to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water.

(e) After approving the work completion report, the Director may extend the prescribed maintenance period for as much as three years after filing of the work completion report if subsequent inspections by the department during the prescribed maintenance period show that erosion controls have failed or are likely to fail to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water.

Lastly, the plan submitter has retained the services of an RPF to provide professional advice to the LTO and timberland owners 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.

Sincerely,



Nick Robinson for:  
Chris Carroll, RPF #2628  
Timberland Resource Consultants

A vertical rectangular document titled "U.S. Postal Service CERTIFIED MAIL RECEIPT". It includes a "Delivery Information" section with a recipient address and a "Signature" section. The document is dated "MAY 10, 2001" and includes a "Postage Paid" stamp.

Send to: 1146 Arcata  
Street Address:  
Or P.O. Box No.: 1371 E Street  
City, State, Zip#: Arcata CA 95521

Send to TIGHT  
Street, Lot No. 10  
or P.O. Box No. 10  
State Mississippi Zip 39001

Send to **Bill Bussell**  
Street, Apt. No. \_\_\_\_\_  
or P.O. Box No. \_\_\_\_\_  
City, State, ZIP+4 **93521**

**Domestic Mail Only; No Insurance Coverage Provided**  
For delivery information visit our website at [www.usps.com](http://www.usps.com)

Certified Fee	\$2.70	\$ 5.32
Return Receipt Fee (Endorsement Required)	\$2.20	
Restricted Delivery Fee (Endorsement Required)	\$0.00	
<b>Total Postage &amp; Fees</b>		<b>\$ 5.32</b>

35540  
NOV 18 2010  
Postmark  
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USPS  
11067300

Send to Robert E J Patel Morris  
Street, Apt No: 39960 Alderpoint Rd.  
or PO Box No. 27488  
City, State, Zip: Blacksburg, VA 95514  
FIPS Form 3800, August 2006  
See Reverse for Instructions

154.



# Timberland Resource Consultants

**FILE COPY**

165 South Fortuna Boulevard, Fortuna, CA 95540

707-725-1897 • fax 707-725-0972

trc@timberlandresource.com

November 4, 2008

George and Mary Schmidbauer  
P.O. Box 143  
Eureka, CA 95502

Dear George and Mary Schmidbauer:

**SUBJECT: SCHMIDBAUER THP**

This letter is to inform you of your responsibilities as listed Plan Submitter, Timberland Owner and Timber Owner on the THP that I am preparing for you within Section 34; Township 6 North, Range 1 East; Humboldt County; HB&M. Below are the pertinent Forest Practice Rules that relate to these responsibilities.

### **TIMBERLAND OWNER'S RESPONSIBILITIES**

The forest practice rules require that the Licensed Timber Operator listed on the THP be responsible for the proper construction, inspection, and maintenance of erosion controls during the prescribed maintenance period until the work completion report is approved by CDF (see rules below). Thereafter, the rules require that the Timberland Owner (you) be responsible for inspection and any needed repair and maintenance of erosion controls within the THP area during the remainder of the prescribed maintenance period (3 years).

#### **923.4 Road Maintenance**

Logging roads, landings, and associated drainage structures used in a timber operation shall be maintained in a manner which minimizes concentration of runoff, soil erosion, and slope instability and which prevents degradation of the quality and beneficial uses of water during timber operations and throughout the prescribed maintenance period. In addition, those roads, which are used in connection with stocking activities, shall be maintained throughout their use even if this is beyond the prescribed maintenance period.

#### **1050 Erosion Control Maintenance**

(a) Where necessary to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water, the department may require that erosion controls be maintained prior to the beginning of a winter period and prior to filing of a work completion report.

(b) The Director may deem completion report as described in PRC 4585 to have been filed upon the date of receipt if the department finds that all erosion controls have been constructed and maintained in compliance with the Forest Practice Rules upon the first inspection after receipt of the completion report. Otherwise, the Director shall accept a work completion report for filing only after the department finds that all erosion controls have been constructed in compliance with the Forest Practice Rules.

(c) The LTO is responsible for proper construction, inspection and maintenance of erosion control during the prescribed maintenance period until the work completion report as described in PRC 4585 is approved by the Director. The landowner is responsible for inspection and any needed repair and maintenance of erosion controls during the remainder of the prescribed maintenance period. Responsibility for erosion control maintenance may be assumed at an earlier date by the landowner or can be delegated to a third party, provided that the assuming party acknowledges such responsibility in writing to the Director.

(d) Upon approving a work completion report, the Director may prescribe a maintenance period which extends for as much as three years after filing the work completion report based on physical evidence (such as location of erosion controls in disturbed areas with high or extreme erosion hazard, on steep or unstable slopes, or within or adjacent to the standard width of a water course or lake protection zone) that erosion controls need to be maintained for the extended maintenance period in order to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water.

(e) After approving the work completion report, the Director may extend the prescribed maintenance period for as much as three years after filing of the work completion report if subsequent inspections by the department during the prescribed maintenance period show that erosion controls have failed or are likely to fail to minimize soil erosion or slope instability or to prevent degradation of the quality and beneficial uses of water.

Lastly, please be reminded that as authorized by the Plan Submitter (John Lima), I have been retained as the RPF, available to provide professional advice to the LTO 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.

#### TIMBER OWNER'S RESPONSIBILITIES

As listed Timber Owner, you are responsible for the filing of a stocking report as described below.

##### 1071 Minimum Stocking Standards

Within five years after the completion of timber operations or as otherwise specified in the rules, a report of stocking on the entire area logged under the plan and shown on a revised map shall be filed with the Director by the timber owner or the agent thereof. If stocking is required to be met upon completion of timber operations, the stocking report shall be submitted within six months of the completion of operations. The minimum acceptable stocking standards on logged areas, which were acceptably stocked prior to harvest, are those specified in the Coast, Northern, and Southern Forest District rules. If not otherwise specified, the following minimum standards apply:

(a) On Site I timberlands as defined by the Board, the average residual basal area, measured in stems one inch or larger in diameter shall be at least 85 square feet per acre; or on Site II or lower shall be at least 50 sq. ft. per acre; or

(b) The area contains an average point count of 300 per acre on Site I, II, and III lands or 150 on Site IV and V lands as specified in PRC 4561. See 14 CCR 912.7, 932.7 and 952.7 for information for the point count values of various size trees and for determining how sprouts will be counted toward meeting stocking requirements.

##### 1075 Report of Stocking

A Report of Stocking on a form acceptable to the Director, certifying that the area logged does not meet or meets minimum stocking standards, shall be submitted by the timber owner or the agent thereof to the Director within five years after completion of timber operations, or as otherwise specified in the rules. The report shall contain the following information:

- (a) Name, address, and telephone number of timber owner(s) or agent thereof.
- (b) The plan number.
- (c) Name of person performing the stocking sampling.
- (d) Map showing the sampling area, by sampling procedure, if more than one procedure is used; the plot locations indicating status as stocked or non-stocked.
- (e) The acreage of each sampling area.
- (f) The number of plot centers installed by sampling procedure.
- (g) The number of stocked plots by sampling procedure.
- (h) Certification by the timber owner or agent thereof.
- (i) Either the plot reference data specified in 14 CCR 1072.2 or direction as to where the plot reference can be obtained.

## 14CCR 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:
  - i. the plan,
  - ii. the Forest Practice Rules, and
  - iii. other associated regulations pertaining to timber operations.

(d)(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:

- i. 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;
  - ii. 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
  - iii. 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.
  - iv. 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) The plan submitter shall notify the Director prior to commencement of site preparation operations. Receipt of a burning permit is sufficient notice.
- (h) Disclose to the LTO, prior to the start of operations, through an on-the-ground meeting, the location and protection measures for any archaeological or historical sites requiring protection if the RPF has submitted written notification to the plan submitter that the plan submitter needs to provide the LTO with this information.
- (i) The person who submitted the original plan, or the successor in interest shall submit any and all subsequent consultations or letters of technical assistance to the Department as enforceable amendments to the plan prior to operations being conducted pursuant to that consultation or letter of technical assistance.

Sincerely,



Chris Carroll, RPF #2628  
Timberland Resource Consultants



165 South Fortuna Boulevard, Fortuna, CA 95540

707-725-1897 • fax 707-725-0972

trc@timberlandresource.com

December 18, 2008

City of Arcata  
737 F Street  
Arcata, CA 95518  
ATN: Mark Andre

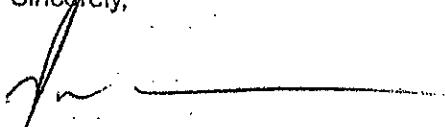
SUBJECT: SCHMIDBAUER THP - THP# 1-08-166HUM

This letter is to inform you that you are being listed as an additional Timber Owner on THP 1-08-166HUM. Trees will need to be harvested to facilitate the use of the seasonal road and proposed landing split by the City of Arcata and the Schmidbauers' property. As such you have been listed as an additional Timber Owner of Record. Any harvesting of trees or removal of vegetation is for the sole purpose of the use of the roads, and therefore no stocking report will be required on your ownership following operations.

COMPLETE THIS SECTION ON DELIVERY		
A. Signature	<input checked="" type="checkbox"/> Agent	<input type="checkbox"/> Addressee
B. Recalled by (Printed Name)	C. Date of Delivery	
D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
If YES, enter delivery address below:		
D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
E. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes		
F. Return Receipt <input type="checkbox"/> Yes		
G. Service Type		
<input type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail		
<input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise		
<input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.		

3. Service Type	<input type="checkbox"/> Certified Mail	<input type="checkbox"/> Express Mail
	<input type="checkbox"/> Registered	<input type="checkbox"/> Return Receipt for Merchandise
	<input type="checkbox"/> Insured Mail	<input type="checkbox"/> C.O.D.
4. Restricted Delivery? (Extra Fee)	<input type="checkbox"/> Yes	
5. Return Receipt <input type="checkbox"/> Yes		
6. Postage		
\$0.42		
7. Certified Fee		
\$2.70		
\$2.20		
\$0.00		
\$5.32		
8. Total Postage & Fees		
\$5.32		

Sincefely,

  
Nick Robinson for:  
Chris Carroll, RPF #2628  
Timberland Resource Consultants



9. City of Arcata - Mark Andre
Appt. No.:
Box No.:
Zip/Postal Code:

PART OF PLAN

RECEIVED

JAN 30 2009

COAST AREA OFFICE  
RESOURCE MANAGEMENT

**NOTE**

Information concerning archeological sites has been removed from THP 1-08-166 HUM, in accordance with the policy of the Office of Historic Preservation as adopted by the State Historical Resources Commission under the authority of Public Resources Code 5020.4.

Copies of the information have been sent to the following locations to facilitate review of the project:

1. CDF field unit - Fortuna
2. Reviewing Archeologist, Santa Rosa (Region Office)

The original copy of this material is maintained in a confidential file at CDF Northern Region Headquarters, 135 Ridgway Avenue, Santa Rosa, CA 95401.

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