
APPENDIX C

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

TIMBER HARVESTING PLAN

FOR ADMIN. USE ONLY

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

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

THP Name: Fairfax Conversion

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

If this is a Modified THP, check box: []

THP No. 1-09-058 SON

Dates Rec'd MAY 01 2009
MAY 19 2009

Date Filed MAY 29 2009

Date Approved _____

Date Expires _____

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 OWNER(S) OF RECORD: Name Codorniu Napa

Address 1345 Henry Road

City Napa State CA Zip 94559 Phone (707) 224-1668

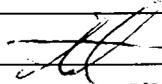
Signature  Date 3-4-09

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

2. TIMBERLAND OWNER(S) OF RECORD: Name Codorniu Napa

Address 1345 Henry Road

City Napa State CA Zip 94559 Phone (707) 224-1668

Signature  Date 3-4-09

3. LICENSED TIMBER OPERATOR(S): Name To be amended in prior to operations. Lic. No. _____

Address _____

City _____ State _____ Zip _____ Phone RECEIVED

Signature _____ Date MAY 01 2009

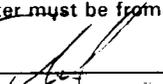
MAY 19 2009

4. PLAN SUBMITTER(S): Name Codorniu Napa

Address 1345 Henry Road

City Napa State CA Zip 94559 Phone (707) 224-1668

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

Signature  Date 3-4-09

Michael Kenton, President
E-1

COAST AREA OFFICE
RESOURCE MANAGEMENT

COAST AREA OFFICE
RESOURCE MANAGEMENT

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 in prior to operations.

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

The LTO.

After the certificate of the Work Completion Report has been signed, the timberland owner shall be responsible for erosion control maintenance for three years as per 14 CCR 916.9(p).

6. a) Expected commencement date of timber operations:
 date of conformance, or _____ (date)

- b) Expected date of completion of timber operations:
 3 years from date of conformance, or _____ (date)

7. The timber operations will occur within the:

COAST FOREST DISTRICT

8. Location of the timber operation by legal description:

Base and Meridian: Mount Diablo Humboldt San Bernardino

<u>Section</u>	<u>Township</u>	<u>Range</u>	<u>Acreage</u>	<u>County</u>	<u>Assessors Parcel Number*</u>
<u>17</u>	<u>10N</u>	<u>13W</u>	<u>20</u>	<u>Sonoma</u>	<u>123-040-027-00</u>
<u>18</u>	<u>10N</u>	<u>13W</u>	<u>134</u>	<u>Sonoma</u>	<u>123-040-027, 024 & 022</u>
TOTAL ACREAGE			<u>154</u>	(Logging Area Only)	* Optional

The conversion/THP area is 154 acres. The entire project work area will total 173 acres.

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

2.2 Grasshopper Creek 1113.830003

2.2 Little Creek 1113.830004

2.2 Annapolis 1113.840303

RECEIVED

JAN 20 2011

COAST AREA OFFICE
RESOURCE MANAGEMENT

USGS Quadrangle(s) and Publication Date(s): 1977 Annapolis 7.5' USGS Quad

9. Yes No Has a timberland conversion permit been submitted? If yes, list expected approval date or permit number and expiration date if already approved: The timberland conversion permit is expected to be approved in conjunction with the THP and EIR in early 2011.

10. Yes No Is there an approved Sustained Yield Plan for this property? Number _____; Date app. _____
 Yes No Has a Sustained Yield Plan been submitted but not approved? Number _____; Date sub. _____

11. Yes No Is there a THP or NTMP on file with CDF for any portion of the plan area for which a report of satisfactory stocking has not been issued by CDF?
If yes identify the THP or NTMP number(s):
- Yes No Is there a contiguous even aged unit with regeneration less than five years old or less than five feet tall? If yes, explain. Ref. Title 14 CCR 913.1 (933.1, 953.1)(a)(4).

12. Yes No Is a Notice of Intent necessary for this THP?
 Yes No If yes was the Notice of Intent posted as required by 14 CCR 1032.7 (g)?

13. RPF preparing the THP: Name Jeff Longcrier RPF Number #2593
Address P.O. Box 435
City Calpella State CA Zip 95418 Phone (707) 485-7211 ext. 20

- 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.
 Yes No I have notified the timber owner and the timberland owner of their responsibilities for compliance with the Forest Practice Act and rule, specifically the stocking requirements of the rules and the maintenance of erosion control structures of the rules.

- b) Yes No I will provide the timber operator with a copy of the portions of the approved THP as listed in 14 CCR 1035(e). If "no", who will provide the LTO a copy of the approved THP?
The Plan Submitter.

I or my supervised designee will meet with the LTO prior to commencement of timber operations to advise of sensitive conditions and provisions of the plan pursuant to Title 14 CCR 1035.2.

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

My responsibility is limited to the preparation of the conversion timber harvest plan, which includes delineation of the conversion THP boundaries, watercourse classification within and adjacent to the conversion units and flagging of timber harvest/conversion units and EEZs as required by the forest practice rules. I shall perform a pre-work conference with the LTO prior to the start of timber operations. My supervised designee or I shall be present on the logging area at a sufficient frequency to know the progress of operations and advise the LTO and timberland owner. The RPF or the supervised designee will make a site visit not less than once during the life of the plan. I will be responsible for providing professional advice throughout the timber operations and shall inform the LTO during operations of any mitigation measures incorporated into the plan that are intended to address operations that have a high likelihood of resulting in immediate, significant and long-term harm to the natural resources of the State if such mitigation measures are not strictly applied to minimize such impacts. I will maintain my right to amend the plan on the behalf of the plan submitter. I will provide written notification to the LTO, the plan submitter and the Department of a decision to withdraw professional services from the plan. The LTO shall be responsible for compliance with and implementation of the Forest Practice Rules and provisions of the THP.

I do not have responsibility for the survey of property boundaries. Property boundaries indicated on maps are as represented by the timberland owner.

The LTO shall be responsible for compliance with and implementation of the Forest Practice Rules and provisions of the THP.

- d) Additional required work requiring an RPF, which I do not have the authority or responsibility to perform: N/A
- e) After considering the rules of the Board of Forestry and Fire Protection and the mitigation measures incorporated in this THP, I have determined that the timber operation:

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

will not have a significant adverse impact on the environment.

Registered Professional Forester: I certify that I, or my supervised designee, personally inspected the THP area, and the 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 _____

3/9/09

SECTION II - PLAN OF TIMBER OPERATIONS

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

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

- Clearcutting _____ ac.
- Shelterwood Prep. Step _____ ac.
- Shelterwood Seed Step _____ ac.
- Shelterwood Removal Step _____ ac.
- Seed Tree Seed Step _____ ac.
- Seed Tree Removal Step _____ ac.
- Selection _____ ac.
- Group Selection _____ ac.
- Transition _____ ac.
- Commercial Thinning _____ ac.
- Road Right of Way _____ ac.
- Sanitation Salvage _____ ac.
- Special Treatment Area _____ ac.
- Rehab. of Understocked Area _____ ac.
- Fuelbreak _____ ac.
- Alternative _____ ac.
- Conversion 154 ac.
- Non-Timberland Area _____ ac.

Total acreage 154 ac.: Explain if total is different from that in 8. MSP option chosen: (a) (b) (c)
The conversion/THP area is 154 acres. The entire project work area will total 173 acres. **Not Applicable**

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

Not applicable as this is a timber harvest plan for the timber operations portion of a timberland conversion.

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

Not applicable.

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

All conifer and hardwood trees within the flagged conversion unit boundary will be removed as a part of timber harvesting for this timberland conversion. Therefore, no timber marking shall be necessary.

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?

All trees within the timber harvest plan/conversion boundary will be removed. Timber marking is not necessary because no trees will be retained.

RECEIVED

JAN 20 2011

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

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

All of the hardwoods and shrubs within the timberland conversion area will be removed. Hardwoods may be sold as firewood, chipped for erosion control or piled and burned at the landowner's preference. Hardwoods and shrubs will not be allowed to revegetate the timberland conversion area as the site will be converted to vineyard.

g. Other instructions to LTO concerning felling operations.

During felling operations on the plan area, timber fallers will fall trees away from buffer zones (into the conversion area) along the watercourses to protect the integrity of the WLPZ.

- h. Yes No **Will artificial regeneration be required to meet stocking standards?**

This is a timberland conversion. As such, the site will not be regenerated with conifer or hardwood species. The site will be converted to vineyard.

- i. Yes No **Will site preparation be used to meet stocking standards? If yes, provide the information required for a site preparation addendum, as per 14 CCR 915.4 (935.4, 955.4).**

- j. **If the rehabilitation method is chosen provide a regeneration plan as required by 14 CCR 913 (933, 953) .4 (b).**

PESTS

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

The THP area is located within the Coastal Pitch Canker Zone of Infestation. Ponderosa Pine, Knobcone Pine and Douglas-fir are possible hosts, but Monterey Pine and Bishop Pine are most susceptible. No evidence of pine pitch canker was noted on any trees during preparation of this THP. If infestation is observed on the plan area all pine material shall be retained and treated (chipped/burned) on site and CAL Fire shall be notified of infestation.

The plan area is also within the Sudden Oak Death Zone of Infestation. For compliance with CDFA regulations, and for the THP to act as a compliance agreement, THPs located in the SOD Zone of Infestation (ZOI) need to address mitigation measures to avoid movement of host material (ref. also 14CCR 917.9 and 917.10).

Recommended Mitigation measures

- a) List of regulated counties: Alameda, Contra Costa, Humboldt, Lake, Marin, Mendocino, Monterey, Napa, San Mateo, Santa Clara, Santa Cruz, San Francisco, Solano, and Sonoma.
- b) List of all host species: Bigleaf maple, California buckeye, Madrone, Manzanita, Scotch heather, Camellia - all species, hybrids and cultivars, Sweet chestnut, European ash, Griselinia, Witch hazel, Toyon, Tanoak, California honeysuckle, False Solomon’s seal, Persian ironwood, Red tip photinia, Mountain Andromeda, Himalaya Andromeda, and all cultivars of the hybrid with Japanese Pieris, Japanese Pieris, Douglas fir, Coast live oak, Canyon live oak, Southern red oak, Holm oak, California black oak, Shreve’s oak, California coffeeberry, Rhododendron (including azalea) – all species, hybrids and cultivars, Wood rose, Coast redwood, Lilac, European yew, Western starflower, California bay laurel, pepperwood, Oregon myrtle, Evergreen huckleberry, Bodnant Viburnum, Doublefile Viburnum, Laurustinus, Western maidenhair fern, California maidenhair fern, Cascara
- c) Host material may be moved off site in the form of Douglas fir and redwood saw logs and firewood or hardwood saw logs or firewood.
- d) Host material shall not be moved outside of the regulated area until appropriate State and Federal permits are obtained.
- e) If host material is moved off site within the regulated area, the THP shall act as the compliance agreement. The destination shall be mill sites within the regulated area. If chips or other material originating from host plant parts, less than 4” in diameter, are removed the material shall be moved in a closed container.
- f) Compliance agreements are valid for only 1 year. For the THP to continue to serve as the compliance agreement if it has not been completed within 1-year of approval, the plan shall need to be amended with a current county compliance agreement, or the THP updated with current mitigations to meet compliance. The plan submitter or RPF of record shall be responsible for amending the plan.
- g) RPF shall inform personnel that they are working in a potentially SOD-infested area and unauthorized movement of plant material is prohibited. The LTO shall be responsible for inspecting vehicles leaving the plan area and ensuring that unauthorized movement of plant material is not conducted.

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).

HARVESTING PRACTICES

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

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

* All tractor operations restrictions apply to ground based equipment.

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

- Low Moderate High Extreme

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

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

An extensive and detailed erosion control plan and water quality protection program have been included within the *Fairfax Conversion Project Environmental Impact Report* providing soil stabilization mitigation measures, in relation to the protection of water quality. The measures included in the EIR that directly relate to the timber removal portion of the project include the following:

Mitigation 3.7-2(a)

- Timber harvesting or timber operations shall not take place within any WLPZ adjacent to the conversion THP area;
- The Licensed Timber Operator (LTO) shall utilize directional felling of timber adjacent to any WLPZ away from the zone, in order to protect the integrity of the zone;
- The LTO shall not pile dirt and debris within or adjacent to the edge of any WLPZ;
- Branches and tops of conifers, root wads, and hardwoods shall not be piled for burning adjacent to any WLPZ;
- Timberland conversion operations (i.e., non-merchantable vegetation removal and stump removal) shall be immediately followed by initial vineyard development operations. Where this is not possible, skid trails and areas of exposed mineral soil created by commercial timber harvest operations shall be grass-seeded and mulched at 4000 lbs/acre (approximately 2" depth at time of application) and a minimum 90 percent cover prior to November 15 of the timber harvesting season. Only native grass species appropriate for the area and weed-free mulch shall be used. Annual (or "Italian") ryegrass (*Lolium multiflorum*) shall not be used for erosion control.

Mitigation 3.7-2(b)

- All temporary roads and landing located within the project area and used to remove timber from the site shall be located a minimum of 50' from watercourses, springs, seep and wetlands, on slopes that are less than 15 percent and in areas that are currently stable. Vegetated filter strips and/or log berms shall be maintained between the roads or landings and watercourses. With the exception of the two permanent roads, all existing seasonal roads, tractor roads, and landings shall be abandoned following completion of timber harvesting operations. In the event that timber harvesting operations cannot be immediately followed by vineyard development, tractor roads shall have drainage and/or drainage collection and storage facilities installed as soon as practicable, but prior to October 15.

Mitigation 3.7-2(f)

- Skid trails associated with the project shall not be used during saturated soil conditions, and shall be abandoned upon completion of harvesting activities. In the event that timber harvesting operations cannot be immediately followed by vineyard development, skid trails shall be grass seeded and mulched as specified above.

Mitigation 3.7-2(g)

- The landowner shall provide for annual inspection of project-associated decommissioned logging roads, to assure gullying and erosion is not occurring.

Mitigation 3.7-2(h)

- Prior to issuance of grading permits, the applicant shall obtain applicable NPDES permits from the North Coast Regional Water Quality Control Board and comply with all applicable programs. Compliance with the Permit requires the project applicant to file a Notice of Intent (NOI) with the State Water Resources Control Board (SWRCB) and prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to construction. The SWPPP shall incorporate Best Management Practices (BMPs) in order to prevent, or reduce to the greatest extent feasible, adverse impacts to water quality from erosion and sedimentation.

An extensive monitoring and reporting program is detailed in Chapter 3.7 of the project EIR that will ensure that following the completion of timber operations the water quality protection measures are working sufficiently and providing the intended protection. Monitoring and reporting are also a component of the SWPPP and General Waste Discharge Requirements and will further ensure adequate protection to water quality.

PART OF PLAN

E-8

RECEIVED

MAY 21 2010

COAST AREA OFFICE
RESOURCE MANAGEMENT

As per 14 CCR 916.9 (k):

- (1) Logging roads, landings or tractor roads shall not be used when visibly turbid water from the road, landing or tractor road (skid trail) or an inside ditch associated with the logging road, landing or tractor road may reach a watercourse or lake in amounts sufficient to cause a turbidity increase in Class I, II, III or IV waters.
- (2) Log hauling on logging roads and landings shall be limited to those which are hydrologically disconnected from watercourses to the extent feasible, and exhibit a stable operating surface in conformance with (1) above.
- (3) Concurrent with use for log hauling, approaches to logging road watercourse crossings shall be treated for erosion control as needed to minimize soil erosion and sediment transport and to prevent the discharge of sediment into watercourses and lakes in quantities deleterious to the beneficial uses of water.
- (4) Concurrent with use for log hauling, all traveled surfaces of logging roads in a WLPZ or within any ELZ or EEZ designated for watercourse or lake protection shall be treated for erosion control as needed to minimize soil erosion and sediment transport and to prevent the discharge of sediment into watercourses and lakes in quantities deleterious to the beneficial uses of water.
- (5) Grading to obtain a drier running surface more than one time before reincorporation of any resulting berms back into the road surface is prohibited.

As per 14 CCR 916.9 (m), all tractor roads shall have drainage and/or drainage collection and storage facilities installed as soon as practical following yarding and prior to either (1) 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.

As per 14 CCR 916.9 (n) within the WLPZ, and within any ELZ designated for watercourse or lake protection, treatments to stabilize soils, minimize soil erosion, and prevent the discharge of sediment into waters in amounts deleterious to aquatic species or the quality and beneficial uses of water, or that threatened to violate applicable water quality requirements, the following measures shall be applied.

- (1) Any areas exceeding 100 square feet where timber operations have exposed bare soil, approaches to tractor road crossings between the drainage facilities closest to the crossing, road cut banks and fills and any other areas of disturbed soil that threatens the beneficial uses of water shall be stabilized.
- (2) Soil stabilization treatment measures may include, but need not be limited to, mulching, rip-rapping, grass seeding, installing commercial erosion control devices to manufacturer's specifications, or chemical soil stabilizers.
- (3) Where straw or slash mulch is used, the minimum straw coverage shall be 90 percent, and any treated area that has been reused or has less than 90 percent surface cover shall be treated again by the end of timber operations.
- (4) Where slash mulch is packed into the ground surface through the use of a tractor or equivalent piece of heavy equipment the minimum slash coverage shall be 75 percent.
- (5) For areas disturbed from May 1 to October 15, treatment shall be completed prior to the start of any rain that causes overland flow across or along the disturbed surface that could deliver sediment into a watercourse or lake in quantities deleterious to the beneficial uses of water.
- (6) For areas disturbed from October 15 to May 1, treatment shall be completed prior to any day for which a chance of rain of 30 percent or greater is forecast by the National Weather Service or within 10 days, whichever is earlier.
- (7) Where the natural ability of ground cover is inadequate to protect beneficial uses of water by minimizing soil erosion or by filtering sediment, soil stabilization treatments shall consist of native grass (or cereal species) seed being distributed at a rate of 25 lbs./acre and mulching with clean straw, slash or other suitable material to no less than 2 inches thick and 90% coverage.

As per 14 CCR 923.2(m), sidecast or fill extending more than 20 feet in slope distance from the outside edge of a roadbed that has access to a Class I or II watercourse shall be seeded and mulched as described above.

As per 14 CCR 923.5(f)(4), sidecast or fill extending more than 20 feet in slope distance from the outside edge of a landing that has access to a watercourse shall be seeded and mulched as described above or removed to adequately reduce soil erosion.

PART OF PLAN E-9

RECEIVED

MAY 21 2010

COAST AREA OFFICE
RESOURCE MANAGEMENT

One of the many resource-based evaluations for the EIR was undertaken by O'Connor Environmental Inc. (OEI) where pre-project and post-project sediment delivery to off-site channels was evaluated (See EIR appendices N & O). It was determined in that work that proposed vineyard drainage improvements, drainage system detention basins, vineyard development Best Management Practices, and related property improvements would nearly reduce post-project sediment yield to that of pre-project conditions. It was further determined that post-project off-site sediment delivery could be reduced below existing background levels if certain existing degraded areas outside the plantable vineyard footprint and within the work area limits were addressed and mitigated from an erosion control standpoint. The six mitigation sites and activities proposed by OEI have therefore been added to the vineyard ECP, and are included in the vineyard development construction drawings. These six sites are shown on the THP Operations Map as **Comment Points 1-6**. Descriptions of these sites are as follows:

1. Elimination of a degraded ATV trail under power lines caused by unauthorized site users. This will be redeveloped as vineyard and drainage.
2. Rock armored outfall on an Annapolis Road culvert outside the vineyard. Hand placed rock armor of s.g. 2.5 and D₅₀ of 6-8" in a thickness of 8-12" in a 4' diameter basin will mitigate and prevent further enlargement of a small channel scour area in an area with negligible tributary area from roadside drainage.
3. Seepage control in abandoned skid road that has eroded and formed a semi-naturalized channel. A subsurface intercept drain will be placed in or near the perimeter vineyard avenue to minimize saturation-based gully enlargement below the reservoir site.
4. Groundwater and seepage control in existing gully. A subsurface intercept drain will be placed in or near the perimeter vineyard avenue to minimize saturation-based gully enlargement downslope in a normally dry Ordinary Water reach .
5. Groundwater and seepage control in second existing gully. A subsurface intercept drain will be placed in or near the perimeter vineyard avenue to minimize saturation-based gully enlargement downslope in a normally dry Ordinary Water reach.
6. Abandoned skid trail repairs. An overgrown and gullied skid trail will be shaped and outsloped. The old car body located on the trail shall be removed during operations. Surface water will be diverted from the entering the site by shaping and installing periodic rolling dips or water bars to prevent accumulation of surface runoff on the trail. The trail shall not be reopened the last 60' from where the diversion gully exits the trail.

Standard Best Management Practices for repair and abatement of these existing degraded sites are indicated on the vineyard development drawings, in standard details, and in the construction specifications of the ECP.

Please see Appendix D of the EIR for the erosion control plan and Chapter 3.7 of the EIR for a detailed description of the water quality protection program.

19. Yes No Are tractor or skidder constructed layouts to be used? If yes, specify the location and extent of use:

20. Yes No Will ground based equipment be used within the area(s) designated for cable yarding? If yes, specify the location and for what purpose the equipment will be used. See 14 CCR 914.3 (934.3, 954.3) (e).

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

PART OF PLAN RECEIVED

JAN 20 2011

a. Yes No Unstable soils or slide areas? Only allowed if unavoidable.

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

If a. is yes, provide site specific measures to minimize effect of operations on slope stability below. Provide explanation and justification in section III as required per 14 CCR 914 (934, 954) .2 (d). CDF requests the RPF consider flagging tractor road locations if "a." is yes. If b., c., d. or e. is yes: 1) the location of tractor roads must be flagged on the ground prior to the PHI or start of operations if a PHI is not required, and 2) you must clearly explain the proposed exception and justify why the standard rule is not feasible or would not comply with 14 CCR 914 (934, 954).

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

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

WINTER OPERATIONS

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

NOTE: "Winter period" means the period between November 15 and April 1, except as noted under special County Rules at Title 14 CCR 925.1, 926.18, 927.1, and 965.5... (a) except as otherwise provided in the rules: (1) All waterbreaks shall be installed no later than the beginning of the winter period of the current year of timber operations. (2) Installation of drainage facilities and structures is required from October 15 to November 15 and April 1 to May 1 on all constructed skid trails and tractor roads prior to sunset if the National Weather Service forecast is a "chance" (30% or more) of rain within the next 24 hours.

As per 14 CCR 916.9 (l), a complete "winter operating plan" has been prepared for limited operations between October 15th and November 15th and April 1st and May 1st of the timber operations season. Operations during these two months will be limited as indicated below in order to minimize damage due to erosion, prevent soil movement into watercourses and soil compaction from felling, yarding, loading and erosion control structures.

The conversion THP area shall be converted from a conifer and mixed hardwood forest to vineyard. As a part of the proposed timber harvest plan all trees and brush shall be harvested. As such, there will be no significant vegetative cover remaining upon completion of timber harvest operations and soil disturbance will be high. Class II and III watercourses located adjacent to the conversion THP area are protected by a WLPZ within which no timber operations shall take place. These WLPZs will provide vegetation filter zones that will effectively prevent any surface erosion from entering the adjacent watercourses. In addition, an Erosion Control Plan has been developed for the conversion timber harvest plan area. Please see the attached Erosion Control Plan for a detailed description of the surface and subsurface drainage proposed for the project area. The following list of items to be addressed have been provided per 14 CCR 914.7(b):

PART OF PLAN
E-11

RECEIVED
MAY 21 2010
COAST AREA OFFICE

- 1) The entire plan area is moderate EHR, therefore, no operations will occur on areas with High or extreme EHR.
- 2) Mechanical site preparation will not occur during the winter period.
- 3) Construction and reconstruction of skid trails, landings or roads on the plan area will not take place during the winter period.
- 4) The winter operating period shall be considered November 15-April 1. No operations are proposed for this period. Operations shall be conducted between October 15th and November 15th and April 1st and May 1st.
- 5) If the U.S. Weather Service forecast predicts a chance of rain (**30% or more**), erosion control structures shall be installed on all constructed tractor roads prior to the end of the day. Only one skid trail shall be open per one piece of active yarding equipment from Oct. 15th to Nov 15th and April 1st to May 1st.
- 6) Precipitation shall be measured in inches of rain fallen.
- 7) All operations will be permitted across the plan area from April 1 to November 15. From November 15-April 1 no operations are proposed. However, as indicated above in Item 18, timber operations shall be limited to dry, rainless periods when soils are not saturated.
- 8) The proposed conversion will result in very low ground cover remaining immediately following timber operations.
- 9) There are no operations proposed within the WLPZ of any Class I or Class II watercourse or Class III ELZs.
- 10) Operation of trucks and heavy equipment on roads and landing shall be limited to those with a stable operating surface. Operation of trucks and heavy equipment will be limited to the period from April 1 to November 15. Operations that create large areas of exposed soil such as brush removal, stump pulling and discing, shall not occur during the extended wet weather period.
- 11) There are no known unstable areas within the THP area.
- 12) During the extended wet weather period (from Oct. 15th to Nov 15th and April 1st to May 1st) operations shall be suspended once 3" of precipitation has fallen as rain. Less than three inches of precipitation in this period shall be considered low antecedent soil moisture. The work period may be extended on a daily or weekly basis up to an accumulation of 6" seasonal precipitation, in consultation with Cal Fire staff and project management based on antecedent moisture conditions and near-term weather forecasts. The LTO shall be responsible for obtaining rainfall data collected by a nearby weather station or from the National Weather Service (<http://www.wrh.noaa.gov/>)

ROADS AND LANDINGS

24. Will any roads be constructed? Yes No, or reconstructed? Yes No If yes, check items a through g.
Will any landings be constructed? Yes No, or reconstructed? Yes No If yes, check items h through k:
- a. 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?
 - c. Yes No Will new roads exceed a grade of 15% or have pitches of 20% for distance 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 27a. 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 of roads to be constructed?

PART OF PLAN

E-12

RECEIVED

MAY 21 2010

COAST AREA OFFICE
RESOURCE MANAGEMENT

- 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.
- 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?

25. If any section in "item 24" above is answered yes, specify site-specific measures to reduce adverse impacts and list any additional or special information needed by the LTO concerning the construction, maintenance, and/or abandonment of roads or landings, as required by 14 CCR Article 12. Include required explanation and justification in THP Section III.

24 f and k) With the exception of the two existing permanent roads shown on the THP Operations Map, all truck roads, tractor roads and landings located within the project area used to remove timber from the conversion THP area will be abandoned following completion of timber harvest operations. Where these facilities are located in the future vineyard units, they will be ripped, disced and planted with grapes. Vehicle access to the vineyard units will be via encroachments at the existing permanent roads that access the conversion plan area/vineyard units and then along "vineyard avenues" within the vineyard units and new perimeter roads. An explanation and justification for the exception to 14 CCR 923.8 has been provided in Section III of the THP. Prior to completion of timber operations, the mapped permanent roads shall be improved where necessary to meet permanent road standards.

As shown on the THP Operations Map, there are temporary roads proposed for construction in order to access timber located on the plan area. The roads are located on slopes less than 15% that are stable. As indicated on the map, these roads are temporary and will only be used to remove timber as a part of the conversion operation.

All roads remaining following timber operations that are used to access vineyard areas will be constructed or maintained utilizing the following criteria identified in the ECP as being in conformance with the Technical Support Document (TSD) for the Gualala River Watershed Water Quality Attainment Action Plan for Sediment (CWRCB, 2001):

- Roads shall be crowned (outsloped) and graded to prevent flow in wheel tracks;
- Water bars shall be placed at a maximum of 100 feet off center where slopes are greater than 15 percent;
- Rocked fords shall be installed through seasonal swales or runoff areas;
- Roadside ditches shall be graded and shaped;
- Cut and fill slopes shall be consistent with slope stability and available access corridors;
- Side cast materials shall be stabilized by slope limits, compaction, mulching, and seeding.
- All field avenues and perimeter roads shall be planted with a permanent cover crop prior to the winter period in which they are created.

All non-appurtenant roads utilized during operations shall be left in a better than current condition by the LTO.

PART OF PLAN

RECEIVED

MAY 21 2010

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

- 26. a. Yes No Are there any watercourse or lakes which contain Class I through IV waters on or adjacent to the plan area? If yes, list the class, WLPZ width, and protective measures determined from Table I and/or 14 CCR 916.4 (c) [936.4 (c), 956.4 (c)] of the WLPZ rules for each watercourse.
- b. Yes No Are there any watercourse crossings that require mapping per 14 CCR 1034 (x)(7)?
- c. Yes No Will tractor road watercourse crossings involve the use of a culvert? If yes, state minimum diameter and length for each culvert (may be shown on map).
- d. Yes No Is the 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 II; provide the background information and analysis in Section III; list instructions to the LTO below for the installation, protection measures, and mitigation measures; as per THP Form Instructions or CDF Mass Mailing, 07/02/1999, "Fish and Game Code 1603 Agreements and THP Documentation".

As shown on the THP Operations Map, there are no Class I, II or III watercourses within the THP/conversion area. However there are Class I (DWS-spring), Class II and III watercourses adjacent to the timberland conversion area. The watercourses that are located adjacent to the timberland conversion area will be treated with a WLPZ as indicated below. The WLPZs, which were identified by flagging harvest units in the field prior to PHI, shall be re-flagged prior to operations.

Specific Protection Measures by Watercourses:

Class I WLPZ: There are two Class I DWS springs adjacent to the project area as shown on the THP Operations Map. The slopes adjacent to the northern most DWS spring (Hall) are greater than 50% and this spring shall be provided with a 150' no operations buffer. The vineyard access road directly above this spring shall be planted with a permanent cover crop and have waterbars installed spaced no more than 75' apart. The slopes adjacent to the southern most DWS spring (Taeffer) are less than 30% and this spring shall be provided with a 100' no operations buffer as well as a 50' no operations buffer surrounding the wetlands above the spring.

Class II (Standard) WLPZ: All Class II watercourses adjacent to the project area are Class II standard watercourses. These watercourses shall be provided with No Operations Zones (NOZ). The NOZ width for Patchett Creek, shown on the THP Operations Map, shall be 100'. The NOZ widths for all other Class II watercourses shall be established based upon slope class as follows:

<u>Slope class</u>	<u>No Operations Zone (feet)</u>
0%-30%	50
30-50%	75
>50%	100

RECEIVED

JUL 27 2010

COAST AREA OFFICE
RESOURCE MANAGEMENT

Class II (Large) WLPZ: Utilizing a combination of office & field based methods described in 916.9(g)(1) it was determined that there are no Class II Large watercourses within or adjacent to the project area.

Class III ELZ: A 30 foot wide ELZ shall be established on both sides of the watercourse for slopes less than 30% and an additional 20 foot ELZ established where side slopes are >30%. A 50 foot ELZ shall be provided to the Class III watercourse labeled as "Red Fern Creek" on the THP map. The ELZ is measured from the WTL. No operations are permitted within any ELZ with the exception of those described at the various map points

Watercourse Crossings

The two temporary Class III truck road watercourse crossings, previously shown as **Points 8 & 9** on the THP Operations Map have been removed from the THP area. These crossings will not be utilized and are no longer shown on the THP maps.

Permanent rocked ford crossings shall be installed at **Points 10 & 11** as shown on the THP Operations Map. These crossings shall be installed to the standards detailed in the project ECP and on the diagrams on THP pages E-24.1 & 24.2 prior to any operations in these areas. Crossing #10 will be used as a skid trail crossing during timber operations. Crossing #11 will not be used during timber operations but will be used following timber operations for vineyard access.

PART OF PLAN

At map **Point 12** a sump spillway shall be constructed within a Class III ELZ. The spillway shall be constructed to the standards stated on THP pages E- 24.3 and 24.4.

As per 14 CCR 916(b) Maintenance, protection, and contribution towards restoration of the quality and beneficial uses of water during the planning, review, and conduct of timber operations shall comply with all applicable legal requirements including those set forth in any applicable water quality control plan adopted or approved by the State Water Resources Control Board. At a minimum, the LTO shall not remove water, trees or large woody debris from a watercourse or lake, the adjacent riparian area, or the adjacent flood prone areas in quantities deleterious to fish, wildlife, beneficial functions of riparian zones, or the quality and beneficial uses of water.

As per 14 CCR 916.3(b) accidental depositions of soil or other debris in Class II watercourses on the plan area shall be removed immediately.

As per 14 CCR 916.4(c)(3) soil deposited during timber operations in a Class III watercourse other than at a temporary crossing shall be removed and stabilized before the conclusion of timber operations, or before October 15th so as to prevent an increase in the organic debris content of watercourses that are located downstream from the plan area. Accidental depositions of debris in a Class III channel shall be stabilized (such that the debris does not create the potential for diversion of the watercourse or the potential build up of excess sediment in amounts greater than found in the watercourse where there is no logging associated debris).

The LTO shall not pile dirt and debris within or directly adjacent to the edge of the WLPZs that are next to the conversion units. Branches and tops of conifers, root wads and hardwoods shall not be piled for burning adjacent to the WLPZs.

No timber operations and no timber falling will take place within Class II WLPZs adjacent to the plan area. As such, the Class II vegetative filter zones will remain intact and undisturbed. This protection exceeds the standard protection measures set forth in the Forest Practice Rules and will help ensure that timber operations outside the WLPZ but within 100 feet of the Class II watercourse does not result in an adverse impact to the beneficial uses of water.

RECEIVED

JAN 20 20

Wetlands and Habitat Preserves

As described in Chapters 3.4 and 3.7 of the project EIR, 0.301-acre of waters of the U.S. and State (i.e. wetlands, isolated wetlands and other waters) will be impacted as a part of the proposed project. While not directly tied to the timber operations portion of the project this impact is being noted here for disclosure purposes.

EAST AREA OFFICE
RESOURCE MANAGER

Prior to the issuance of grading permits, the project applicant shall obtain a 404 permit (CWA) from the Army Corps and a water quality certification from RWQCB under Section 401 of the CWA.

The project design would avoid 3.154 acres of waters of the U.S. and State, preserving these features in permanently protected preserves and streamside conservation areas. In total, 91 percent of all waters of the State and U.S. would be protected in perpetuity on the project site. The wetland areas to be avoided have been shown on the THP Operations Map and have been flagged out of the operations area. For those wetland areas that cannot be avoided, compensation wetlands would be created to compensate for the loss of these features. New wetlands shall be created onsite in what is now upland to compensate for the loss of waters of the U.S. and State. The new wetlands will resemble those wetlands affected by the project (known as in-kind replacement). Construction of the mitigation wetlands on the project site will create 0.602 acres of new waters of the United States, to replace 0.301 acres of impacts to waters of the U.S. and State. The replacement ratio is 2:1 (for each square foot of impacts to waters of the U.S. and State, two square feet of waters of the U.S. and State would be created). The Erosion Control and Mitigation Plan illustrates the mitigation wetland design. The mitigation wetland shall be constructed within the Horkelia and manzanita preserves discussed below under Item 32.

In addition to the Horkelia and manzanita preserves, which include the mitigation wetlands, streamside conservation areas on the project site totaling approximately 151 acres shall be preserved to protect the beneficial uses of the watershed and provide wildlife habitat. These preserves and conservation areas will be recorded as permanent deed restrictions on the title of the property that run with the title in perpetuity. Prior to timber operations the preserves shall be fenced according to the Fencing Plan prepared by Erickson Engineering. A biological monitor shall be present at all times during soil moving activities. The monitor will ensure that all vegetation and waters of the United States outside of the proposed impact areas are protected and that all operations avoid impacting these areas. In addition, this monitor shall ensure that the Horkelia and Annapolis Manzanita Preserve fencing is installed and that there are no vineyard construction activities occurring within these preserves.

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

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

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, 28b need not be answered.
- b. Yes No Is an exemption requested of the notification requirements of 14 CCR 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.

Domestic Water Supply notification letters were sent on December 23, 2004 and again on August 22, 2007. Copies of those letters as well as responses from both notifications are included in Section V. While domestic water supplies were noted, a large majority of the responses identified well locations as apposed to surface collected supplies. An extensive analysis of water availability and water quality has been conducted during the preparation of the associated EIR (see chapter 3.7 of the EIR) and it was determined that the standard Watercourse and Lake Protection rules in combination with the water quality protection measures included within the project EIR and ECP will result in less than significant impacts.

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

HAZARD REDUCTION

30. a. Yes No **Are there roads or improvements which require slash treatment adjacent to them? If yes, specify the type of improvement, treatment distance, and treatment method.**

A fire hazard reduction zone shall be observed along those portions of the timberland conversion area that are adjacent to Annapolis Road, a county maintained public road. The fire hazard reduction zone will extend 100 feet from the edge of Annapolis Road. Within this zone slash created and trees knocked down by timber operations shall be treated for fire hazard reduction by lopping, piling and burning or removal from the zone.

The two driveways, shown as "Existing Permanent Roads" on the THP Operations Map, are open for public use, therefore a hazard reduction zone shall be observed along these roads during timber operations. Within 50 feet of the edge of these roads, slash created and trees knocked down by timber operations shall be treated by lopping, piling and burning, chipping, burying or removal from the zone.

All woody debris created by timber operations greater than one inch but less than eight inches in diameter within 100 feet of permanently located structures maintained for human habitation 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, removed, chipped or piled and burned; lopping may be required between 200-500 feet where unusual fire risk or hazard exist as determined by the Director or the RPF.

Lopping used within a fire hazard reduction zone shall consist of severing and spreading slash so that no part of it remains more than 30 inches above the ground.

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

The LTO is responsible for general slash disposal throughout the plan area as per 917.2. Chipping and lopping will be the preferred method of slash treatment, leaving the organic matter for erosion control measures. However, slash may also be treated by piling and burning or removal. Slash to be treated by piling and burning shall be treated not later than April 1 of the year following its creation, or within 30 days following climatic access. Prior to commencement of any burning operations, the appropriate burn permits shall be obtained from the local Air Quality Control Office and /or CDF when and where necessary.

BIOLOGICAL AND CULTURAL RESOURCES

32. a. [X]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 sensitive species by the Board, associated with the THP area? If yes, identify the species and provisions to be taken for the protection of the species.

Plant and animal species identified as known Rare, Threatened or Endangered listed (US & CA) species and Sensitive Species (BOF) have been evaluated. Monk and Associates The Natural Diversity Data Base (NDDDB) of the California Department of Fish and Game (DFG), California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California, the California Wildlife Habitat Relationships System (WHR) and various wildlife biologists including Monk and Associates were consulted for occurrences of special plants, animals and natural communities on the biological assessment area.

The following is a list of Sensitive, Rare, Threatened and Endangered species which have been identified as potentially occurring within the Biological Assessment Area:

<p>Bald eagle (<i>Haliaeetus leucocephalus</i>) Golden eagle (<i>Aquila chrysaetos</i>) Peregrine falcon (<i>Falco peregrinus</i>) Northern spotted owl (<i>Strix occidentalis caurina</i>) Osprey (<i>Pandion haliaetus</i>) Great blue heron (<i>Ardea herodias</i>) Great egret (<i>Casmerodius albus</i>) Northern goshawk (<i>Accipiter gentilis</i>) Northern harrier (<i>Circus cyaneus</i>) Sharp-shinned hawk (<i>Accipiter striatus</i>) Cooper's hawk (<i>Accipiter cooperii</i>) Red-shouldered hawk (<i>Buteo lineatus</i>) Red-tailed hawk (<i>Buteo jamaicensis</i>) Merlin (<i>Falco columbarius</i>) Prairie falcon (<i>Falco mexicanus</i>) White-tailed kite (<i>Elanus leucurus</i>) Marbled murrelet (<i>Brachyramphus marmoratus</i>) Western screech owl (<i>Otus kennicottii</i>) Yellow warbler (<i>Dendroica petechia</i>)</p> <p>Red tree vole (<i>Phenacomys longicaudus</i>) Pacific Fisher (<i>Martes pennanti pacifica</i>) Humboldt Marten (<i>Martes americana humboldtensis</i>)</p> <p>Red-legged frog (<i>Rana aurora aurora</i>) Foothill Yellow-legged frog (<i>Rana boylei</i>) Tailed frog (<i>Ascaphus truei</i>)</p> <p>Northwestern pond turtle (<i>Clemmys marmorata marmorata</i>)</p> <p>Coho salmon, (<i>Oncorhynchus kisutch</i>) Steelhead (<i>Oncorhynchus mykiss gairdneri</i>) Chinook (<i>Oncorhynchus tshawytscha</i>) Gualala roach (<i>Lavinia symmetricus parvipinnis</i>)</p>	<p>Behren's silverspot butterfly <i>Speyeria zerene behrensii</i></p> <p>Serpentine daisy <i>Erigeron serpentinus</i> Supple daisy <i>Erigeron supplex</i> Short-leaved evax <i>Hesperevax sparsiflora brevifolia</i> Goldfields <i>Lasthenia macrantha bakeri</i> Goldfields <i>Lasthenia macrantha macrantha</i> Beaked tracyina <i>Tracyina rostrata</i> Secund jewelflower <i>Streptanthus glandulosus hoffmani</i> Three Peaks jewelflower <i>Streptanthus morrisonii elatus</i> Dorr's Cabin jewelflower <i>Streptanthus morrisonii hirtiflorus</i> Morrison's jewelflower <i>Streptanthus morrisonii morrisonii</i> Swamp bellflower <i>Campanula californica</i> Coastal bluff morning-glory <i>Calystegia purpurata saxicola</i> Pygmy cypress <i>Cupressus goveniana pigmaea</i> Deceiving sedge <i>Carex saliniformis</i> The Cedars manzanita <i>Arctostaphylos bakeri sublaevis</i> California indigobush <i>Amorpha californica napensis</i> Cobb Mountain lupine <i>Lupinus sericatus</i> Cedars fairy lantern <i>Calochortus raichei</i> Coast lily <i>Lilium maritimum</i> Point Reyes checkerbloom <i>Sidalcea calycosa rhizomata</i> Maple-leaved checkerbloom <i>Sidalcea malachroides</i> Checker mallow <i>Sidalcea malvaeflora purpurea</i> Blasdale's bent grass <i>Agrostis blasdalei</i> Globe gilia <i>Gilia capitata tomentosa</i> Dark-eyed gilia <i>Gilia millefoliata</i> Rose leptosiphon <i>Leptosiphon rosaceus</i> Sonoma spineflower <i>Chorizanthe valida</i> Snow Mountain buckwheat <i>Eriogonum nervulosum</i> Holly-leaf ceanothus <i>Ceanothus purpureus</i> Thin-lobed horkelia <i>Horkelia tenuiloba</i></p>
--	--

Botanical and Biological surveys have been conducted and a detailed account of the Botanical and Biological assessments and surveys is included in Chapter 3.4 of the project EIR.

The THP area is within the range of the Northern Spotted Owl (NSO), listed as threatened by the U.S. Fish and Wildlife Service under federal law. NSO territory SON 043 is within 0.7 miles and territory SON 058 is within 1.3 miles of the plan boundary. In order to meet the requirements of 14 CCR 919.9(e) the following protection measures described in the US Fish and Wildlife Coastal Northern Spotted Owl Habitat Description shall be accepted as enforceable conditions of the THP:

Habitat Protection Measures

1. Definitions of nesting-roosting and foraging habitat.
 - a. Nesting-Roosting Habitat includes the following:
 - A. $\geq 60\%$ canopy cover of trees ≥ 11 inches diameter at breast height (dbh).
 - b. Foraging Habitat includes the following:
 - A. $\geq 40\%$ canopy cover of trees 11 inches dbh.
 - B. Basal area = ≥ 75 ft²/acre of trees ≥ 11 inches dbh.

2. Priority Ranking of Habitat Retention Areas.
 - a. Tree Species Composition.

Mixed conifer stands should be selected over pine-dominated stands.

 - A. Abiotic Considerations include the following:
 - i. Distance to Nest.
 - I. Nesting-roosting and foraging habitat should be located closest to identified nest tree(s), or closest to roosting tree(s), if no nesting trees are identified.
 - ii. Contiguity.
 - I. Nesting-roosting habitat within the 0.5-radius circle around an activity center must be as contiguous as possible.
 - II. Fragmentation of foraging habitat must be minimized as much as possible.
 - iii. Slope Position.
 - I. Habitats located on the lower one-third of slopes provide optimal microclimatological conditions and an increased potential for the presence of intermittent or year-round water resources.
 - iv. Aspect.
 - I. Habitats located on northern aspects provide optimal vegetation composition and cooler site conditions.
 - v. Elevation.
 - I. Habitat should be located at elevations of less than 6000 feet, although the elevation of some activity centers (primarily east of Interstate 5) may necessitate inclusion of habitat at elevations greater than 6000 feet.

3. Habitat Quantities.
 - a. Within 1000 feet of each activity center:
 - A. Outside of the breeding season (August 1 through January 31), no timber operations shall occur within 1000 feet of an activity center other than use of existing roads.
 - B. During the breeding season (February 1 through July 30), no timber operations shall occur within 1000 feet of an activity center other than use of existing, permanent, year-round roads.
 - b. Within 0.7-mile radius (1000 acres) of, and centered on, each activity center:
 - A. Habitat shall be retained to maximize attributes desirable for NSOs described in (2) above.
 - B. At least 500 acres of suitable habitat must be present, as follows:
 - i. 200 acres of nesting-roosting habitat.
 - I. No timber harvest shall occur within the 100 acres of nesting-roosting habitat immediately surrounding each activity center.
 - II. If the remaining 100 acres of nesting-roosting habitat is contiguous with the activity center or is located within the same drainage, harvest shall not reduce the pre-harvest basal area of these acres by more than 33%.

- III. If the remaining 100 acres of nesting-roosting habitat is not contiguous with the activity center or is not located within the same drainage, $\geq 60\%$ canopy cover of trees ≥ 11 inches dbh shall be retained.
- ii. ≥ 300 acres of foraging habitat.
- C. No more than 1/3 of the remaining suitable habitat shall be harvested during the life of the plan.
- c. Between the 0.7-mile and 1.3-mile radius circles centered on each activity center:
- A. Retention of habitat should follow the ranking guidelines contained in (2) above.
- B. ≥ 836 acres of suitable habitat must be present.
- C. No more than 1/3 of the remaining suitable habitat shall be harvested during the life of the plan.

RECEIVED
MAY 21 2010
 COAST AREA OFFICE
 RESOURCE MANAGEMENT

If there is a deficit of any habitat quantities pre harvest, operations within that habitat type shall not reduce or degrade the amount or quality of that habitat.

Operational Protection Measures

- (a) Helicopter yarding within 0.5 miles of an NSO activity center is prohibited between February 1st and August 31st.
- (b) No timber harvest operations shall occur until such time as CAL FIRE has reviewed all survey and habitat information required by 919.9 (provided in Section V of the THP), has determined pursuant to 14 CCR 919.10 that take of an NSO will not occur and the CAL FIRE take determination has been amended into the THP. Any change in timber operations that results from a change in location, or the discovery, of an NSO after plan approval will have to be incorporated into the plan through the amendment process per 14 CCR §§ 1039, 1040, 1090.24, 1090.25 and 1092.27. CAL FIRE will treat such a change in timber operations as a minor or substantial amendment, depending on the extent of the change.

The following Botanical and Biological protection/mitigation measures have been included in the EIR for this project and those that pertain to timber operations are repeated here (numbers in parenthesis refer to the mitigation number in the EIR):

- (3.4-1) Thin-lobed horkelia has been identified on the project site and the proposed project would result in minor impacts to this plant. The plant is not protected under either the State or Federal Endangered Species Acts, nor is the plant protected pursuant to any special state or federal regulation or law. However, the thin-lobed horkelia is a CNPS List 1B.2 species. According to the CNPS, all of the plants constituting List 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the CDFG Code, and thus would be eligible for state listing (CNPS 2001).
- Prior to the issuance of a grading permit, the applicant shall set aside approximately 15.6 acres for a *Horkelia tenuiloba* reserve. The reserve shall be dedicated in perpetuity through a permanent deed restriction recorded on the title of the property. The reserve area shall not be developed. Timber operations in the areas adjacent to the reserve shall use directional falling so that timber marked for removal falls away from the reserve area. Heavy equipment and vehicles shall be excluded from the reserve area during project development and operations. Following completion of vineyard development activities, the applicant shall ensure that any herbicide applications which may take place in the nearby vineyard unit(s) do not affect or enter the horkelia reserve. A monitoring and management plan is included on THP pages E-32.1 through 32.4. This plan shall be subject to the review and approval of the Department of Forestry and the Sonoma County Permit and Resource Management Department.
- (3.4-2) Annapolis manzanita has been identified on the project site. Annapolis manzanita is a hybrid manzanita unique to the Annapolis area. Two Annapolis manzanita populations occur on the project site. Annapolis manzanita does not have any state or federal status, nor is the plant listed by CNPS. However, because of the uniqueness of this population, Dr. Tom Parker and Mr. Michael Vasey of San Francisco State University recommended that the proposed project include incorporation of protection measures for Annapolis manzanita until further studies have been conducted. Because CEQA documents will take into account the local or unique rarity of a species and require protection for these locally

unique or locally rare species, any impacts to Annapolis manzanita must be considered significant and adverse pursuant to CEQA.

Prior to issuance of a grading permit, the applicant shall set aside an area totaling approximately 4.4 acres on the east side of the project site for the preservation of Annapolis manzanita identified on the Artesa property. The reserve shall be dedicated in perpetuity through a permanent deed restriction recorded on the title of the property. The reserve area shall not be developed. Timber operations in the areas adjacent to the preserve shall use directional falling so that timber marked for removal falls away from the reserve area. Heavy equipment and vehicles shall be excluded from the reserve area during project development and operations. Following completion of vineyard development activities, the applicant shall ensure that any herbicide applications which may take place in the nearby vineyard unit(s) do not affect or enter the Annapolis manzanita reserve. A monitoring and management plan is included on THP pages E-32.1 through 32.4. The plan shall be subject to the review and approval of the Department of Forestry and the Sonoma County Permit and Resource Management Department.

- (3.4.-5) Suitable nesting habitat for western screech owl, great horned owl, barn owl, Cooper's hawk, sharp-shinned hawk, red-shouldered hawk, and red-tailed hawk occurs on the project site. All are protected under the Migratory Bird Treaty Act (50 CFR 10.13) and their nest, eggs, and young are protected under California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800. Any substantial project-related impacts to these species would be considered a significant adverse impact. Potential impacts to these species from the proposed project include disturbance to nesting birds, and possibly death of adults and/or young. No nesting raptors (birds of prey) have been identified on the proposed project site during cursory raptor nesting surveys. Four raptors including the barn owl, red-tailed hawk, western screech owl, and American kestrel have been identified onsite. All birds are mobile species and can readily change nest sites from year to year. As such, impacts to nesting raptors are regarded as potentially significant.

If operations are proposed during breeding season (February 15th –August 31st), protocol level surveys for raptors shall be conducted within 14 days prior to operations in each year [by a qualified biologist] and shall include examination of all trees on-site and within 500 feet of the project boundaries, if possible, and not just trees slated for removal. All stick nests shall be examined and all tree cavities shall be examined for evidence of nesting raptors. Survey techniques will include stand watches and vocalization surveys, in addition to systematic transect surveys of the project site. If timber operations do not start the year surveys are conducted and operations are proposed during the following raptor nesting season, then, at a minimum, early season surveys shall be conducted the year of operations. The results of the survey shall be submitted to the Department of Forestry. If active nests are not found during the survey, further mitigation shall not be required at that time.

If nesting raptors are identified during the surveys, a minimum buffer of 500 feet shall be established for accipiters and 1,000 feet for buteos and other raptors. These non-disturbance buffers will be demarcated on the project site via flagging or construction fencing and may not be modified unless smaller buffers are allowed in consultation with CDFG. All raptor nest buffers will be discussed with CDFG prior to harvesting timber or clearing vegetation any closer than 1,000 feet from active nest sites. No tree or brush removal, earth-moving activities, or human intrusion (except by biologists or individuals accompanied by a qualified raptor biologist) shall occur within the established buffer until it is determined by a qualified raptor biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. This typically occurs by August 1. This date may be earlier than August 1, or later, and would have to be determined by a qualified raptor biologist.

- (3.4-6) Most birds known from the region of the project site are protected under the Migratory Bird Treaty Act (50 CFR 10.13). This Act prohibits "take" (i.e., direct or indirect activities that cause avian mortality including their eggs and young) of any species listed under this Act. Similarly, nests, eggs, and/or young of all nesting birds are protected under California Fish and Game Code Sections 3503. Section 3800 makes it unlawful to take any nongame bird except as otherwise allowed by Fish and Game Codes. Section 3503.5 of the Fish and Game Code makes it unlawful to take, possess, or destroy raptors or their eggs. Finally, Fish.

The Migratory Bird Treaty Act and California Fish and Game Code Sections 3503, 3513, and 3800 prohibit the direct take of birds and their eggs and/or young. While birds in general can fly out of harm's way, bird's nests are vulnerable to destruction and disturbance that causes nest abandonment and concomitant loss of eggs and/or young. The project shall not impact nesting birds. Accordingly, if harvesting/conversion/land clearing and/or grading would occur between February 1st and September 1st, qualified biologists shall be required to conduct systematic, intensive preconstruction nesting bird surveys to ensure that there is no direct take of nesting birds, their eggs or young. Surveys should be in focused areas that consist of 100'x 100' plots of land and shall commence no sooner than two weeks in advance of timber harvesting/land conversion.

PART OF PLAN

RECEIVED

JUL 27 2010

**COAST AREA OFFICE
RESOURCE MANAGEMENT**

The buffer of any nest identified would have to be demarcated with a double stand of bright orange flagging tape tied 5 to 8 feet above the ground, and would have to be of sufficient size to protect the nest until such time that young fledge and reach independence of the nest. The size of the nesting buffer would need to be determined in the field by a qualified ornithologist, but should be, at a minimum, no less than 50 feet in diameter measured from the drip line of the nesting tree/bush. While labor intensive, such nesting bird surveys would best protect nesting birds and would otherwise ensure the project remains in compliance with the Migratory Bird Treaty Act and Fish and Game Codes that protect nesting birds.

- (3.4-7) Yellow warblers have been observed on the project site. Riparian habitat on the project site is not well developed, but provides marginal nesting habitat for this species. Riparian vegetation would not be impacted by the project, but project activities will likely commence near riparian habitats. Impacts to the yellow warbler from the proposed project include loss of potential nesting habitat, death to individual warblers, their eggs, and/or young. Such impacts would be regarded as a potentially significant adverse impact to this species.

To ensure that operational-related impacts do not occur to nesting yellow warblers and other migratory birds on the project site biologists will conduct a minimum of three tape-playback surveys in suitable yellow warbler nesting habitat during the 2010 nesting season (June – July). This timeframe is approximately one year in advance of any realistic timeframe for commencement of the proposed project. If territorial pairs are identified in 2010, an additional three surveys would be conducted using tape-playback triangulation detection methods to locate any nesting yellow warblers. Finally, if nesting yellow warblers are determined to occur on the project site in 2010 then prior to harvesting timber in subsequent years additional surveys would be conducted per above to determine if timber harvesting could impact nesting yellow warblers. If they are not found in 2010 then no special additional surveys in subsequent years would be conducted outside of the already prescribed intensive nesting bird survey efforts required to remain in compliance with the Migratory Bird Treaty Act.

If nesting yellow warblers and/or other migratory birds are identified nesting on or adjacent to the project site, a suitable temporary buffer area shall be fenced around the nest tree. The size of the nesting buffer shall be determined in the field by a qualified ornithologist, but should be, at a minimum, not less than 150 feet between the nest site and the operations area. The dripline of the nest tree shall be fenced with orange construction fencing (provided the tree is on the project site), and a 150-foot radius around the nest tree shall be staked with bright orange lath or other suitable staking. If the tree is adjacent to the project site then the buffer shall be demarcated per above where the buffer occurs on the project site. All nesting site protection buffers shall be discussed with CDFG prior to conducting timber or vegetation clearing any closer than 300 feet from the nest site. Operations shall not occur within the established buffer until a qualified ornithologist has determined that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones.

- (3.4-9) The foothill yellow-legged frog is a state species of special concern. It has no special federal status. Species of special concern must be addressed in CEQA documents. This frog has been identified in Patchett Creek onsite. It should be noted that most of Patchett Creek on the project site, and in all cases where foothill yellow-legged frogs have been found, is deeply incised in solid rock. Where the frogs occur the creek banks are vertical ranging between 6 and 8 feet in height. A broad channel bottom characterized by deep pools lies within the incised channel banks. Foothill yellow-legged frog survives on the project site in this protected aquatic system that is for all intents and purposes inaccessible to predators. Regardless, any impact to Patchett Creek from the proposed project could result in significant adverse impacts to the foothill yellow-legged frog. While no impacts are proposed to occur to Patchett Creek, at this time impacts to this frog are considered potentially significant. This impact could be reduced to a level considered less than significant pursuant to CEQA by implementation of the following mitigation measure.

In order to avoid impacting Patchett Creek and the foothill yellow-legged frogs that reside in this creek, a minimum 100-foot protective buffer will be maintained between Patchett Creek top-of-banks and project site development (Figure 3.4-4). This buffer will ensure that the existing shade and sunlight regimes present today in Patchett Creek are maintained except as modified by natural succession. In addition, a project site preconstruction SWPPP will be implemented prior to implementation of grading activities to ensure that Patchett Creek, and indeed most tributaries on the project site (with rare exception), are protected from siltation and/or other project-related downstream impacts. Similarly, a post-project BMPs plan will also be implemented to ensure that there are no impacts to the water quality in Patchett Creek or other downstream receiving waters after implementation of the project. In addition, there is no significant potential for contamination of Patchett Creek by the use of fertilizer, herbicide, insecticide, or other agricultural chemicals in the proposed vineyard. Qualified, properly certified vineyard managers

will use only State-approved fertilizers, herbicides, insecticides or other agricultural chemicals in accordance with the label instructions and any applicable usage guidelines in the event that any of these are determined necessary. Implementation of the SWPPP and the post project BMPs plan, and the establishment of protective buffers along Patchett Creek will ensure that impacts to the foothill yellow-legged frog are avoided.

- (3.4-10) The California red-legged frog (CRLF) (*Rana draytonii*) was federally listed as threatened on May 23, 1996 and as such is protected pursuant to the Federal Endangered Species Act. In September 2008, the USFWS re-proposed critical habitat for the California red-legged frog (USFWS 2008). Closest mapped critical habitat or proposed critical habitat occurs in southern Sonoma County and in south-central Mendocino County. No critical habitat or proposed critical habitat is mapped any closer than approximately 28 miles (straight-line) from the project site. Unit MEN-1 is recently re-proposed critical habitat that is approximately 28 miles north of the project site. Units MRN 1, 2, and 3 are critical habitats that at the closest point to the project site are approximately 34 miles to the south. Critical Habitat Units SON 1, 2, and 3 at their closest point to the project site are approximately 45 miles to the southeast. The closest record for the California red-legged frog to the project site is approximately 9.7 miles northwest of the project site (CNDDDB Occurrence No. 967). The record location is for a pond in a Bishop pine (*Pinus muricata*) forest north of the Gualala River. The California red-legged frog is also a state "species of special concern." This title affords no legally mandated protection for this species; however, pursuant to CEQA (14 CCR §15380), any project related impacts to this species would be regarded as significant. The proposed Timber Harvest Plan and Vineyard Conversion project could result in impacts to upland habitat that provides potential dispersal habitat for California red-legged frogs. No suitable breeding habitat occurs on the project site and thus no impacts are expected to occur to red-legged frog breeding habitat. Because of the presence of suitable dispersal and aquatic habitats, impacts to the California red-legged frog are regarded as a potentially significant adverse impact.

A qualified 10(a)(1)(A) biologist authorized to work with the California red-legged frog shall conduct protocol-level surveys for California red-legged frog based on the field methods presented in the U.S. Fish and Wildlife Service's (USFWS) Revised Guidance on site assessment and field surveys for California red-legged frogs (dated August 2005). The USFWS Guidance recommends a total of eight (8) surveys to determine the presence of California red-legged frog at or near a project site. If no California red-legged frogs are found within the project area during these surveys, no further regard for the California red-legged frog would be necessary. No additional mitigation measures would be required and impacts would be regarded as less than significant pursuant to the CEQA. If red-legged frogs are identified at any time during the course of surveys, no additional surveys will be conducted in the area, unless the surveying effort is part of a Service-approved project to determine the distribution of frogs at a site.

Permission will be obtained from the USFWS for genetic testing to determine what species of red-legged frog occurs on the project site. If the species is the northern red-legged frog, mitigation compensation shall consist of dedicating Patchett Creek in a permanently preserved corridor and compensating for impacts to waters of the U.S. at a 2:1 ratio (replacement to impacts) consistent with other mitigation measures detailed herein that project wetlands and creek corridors.

If genetic testing confirms the presence of the California red-legged frog the following additional mitigation measures shall be required. An incidental take permit shall be acquired from USFWS for the proposed project prior to implementing the project. In addition, the applicant shall purchase mitigation credits at a USFWS-approved mitigation bank with a Service Area that covers the project site or as otherwise approved by the USFWS. The total credits purchased by the applicant shall ultimately be consistent with USFWS requirements for this project. In lieu of purchase of mitigation credits from an approved CRLF mitigation bank, the applicant may secure and preserve in perpetuity habitat that is known to support the CRLF.

If harvest operations are not completed by the end of the 2011 floristic season, additional plant surveys shall be conducted.

- 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 protections of the species.

NOTE: See THP Form Instructions or the CDF Mass Mailing, 07/02/1999, section on "CDF Guidelines for Species Surveys and Mitigations" to complete these questions

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

All snags within the conversion timber harvest plan area will be removed as a part of the proposed timberland conversion operation.

34. [] Yes [X] No Are any Late Succession Forest Stands proposed for harvest? If yes, describe the measures to be implemented by the LTO that avoid long-term significant adverse effects on fish, wildlife and listed species known to be primarily associated with late succession forests.

35. [] Yes [X] No Are any other provisions for wildlife protection required by the rules? If yes, describe. While not required by the rules, a large, mature redwood tree located during the PHI that provides wildlife habitat shall be retained and provided with a 25' buffer. The location of the tree is shown on the THP Operations Map as Comment Point 13. In addition, riparian habitat shall be enhanced per the Riparian Planting Plan included in Section V (pages E-160.1-160.18)

RECEIVED

36. a. [X] Yes [] No Has an archaeological survey been made of the THP area?

JUL 27 2010

b. [X] Yes [] No Has a current archaeological records check been conducted for the THP area? EAST AREA OFFICE RESOURCE MANAGEMENT

c. [X] 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.

Prior to timber operations, an onsite pre operations meeting shall be arranged by the RPF. This meeting shall include the RPF, the LTO, and an appropriate representative of the Kashia Band of Pomo Indians, Calfire Archaeologist, and the Forest Practice Inspector. The pre operational meeting will be held to discuss how timber operations will proceed while protecting the known and unknown archaeological sites.

37. [] Yes [X] No Has any inventory or growth and yield information designated "trade secret" been submitted in a separate confidential envelope in Section VI of this THP?

38. Describe any special instructions or constraints that are not listed elsewhere in Section II.

Prior to operations the RPF shall re-flag the project area and watercourse protection zones to ensure that the flagging is plainly visible.

Flagging Code:

Solid Blue – Class III watercourse, Blue/White Stripe – Class II watercourse, Pink/THP Boundary - Harvest Boundary, Orange – Truck Road

Conditions stated in Section V of the THP which pertain to NCRWQCB Waste Discharge requirements shall not be enforced by the Department unless those same conditions are subject to the Forest Practice Act/Rules and included as enforceable provisions in Section II of the THP.

As per 14 CCR 1035.4 each calendar year, within fifteen days before and not later than the day of the start of timber operations, the RPF shall notify CAL FIRE of the start of operations. The notification shall be made by telephone: LNU = (707) 576-2959 or Email: santarosareviewteam@fire.ca.gov

DIRECTOR OF FORESTRY AND FIRE PROTECTION

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

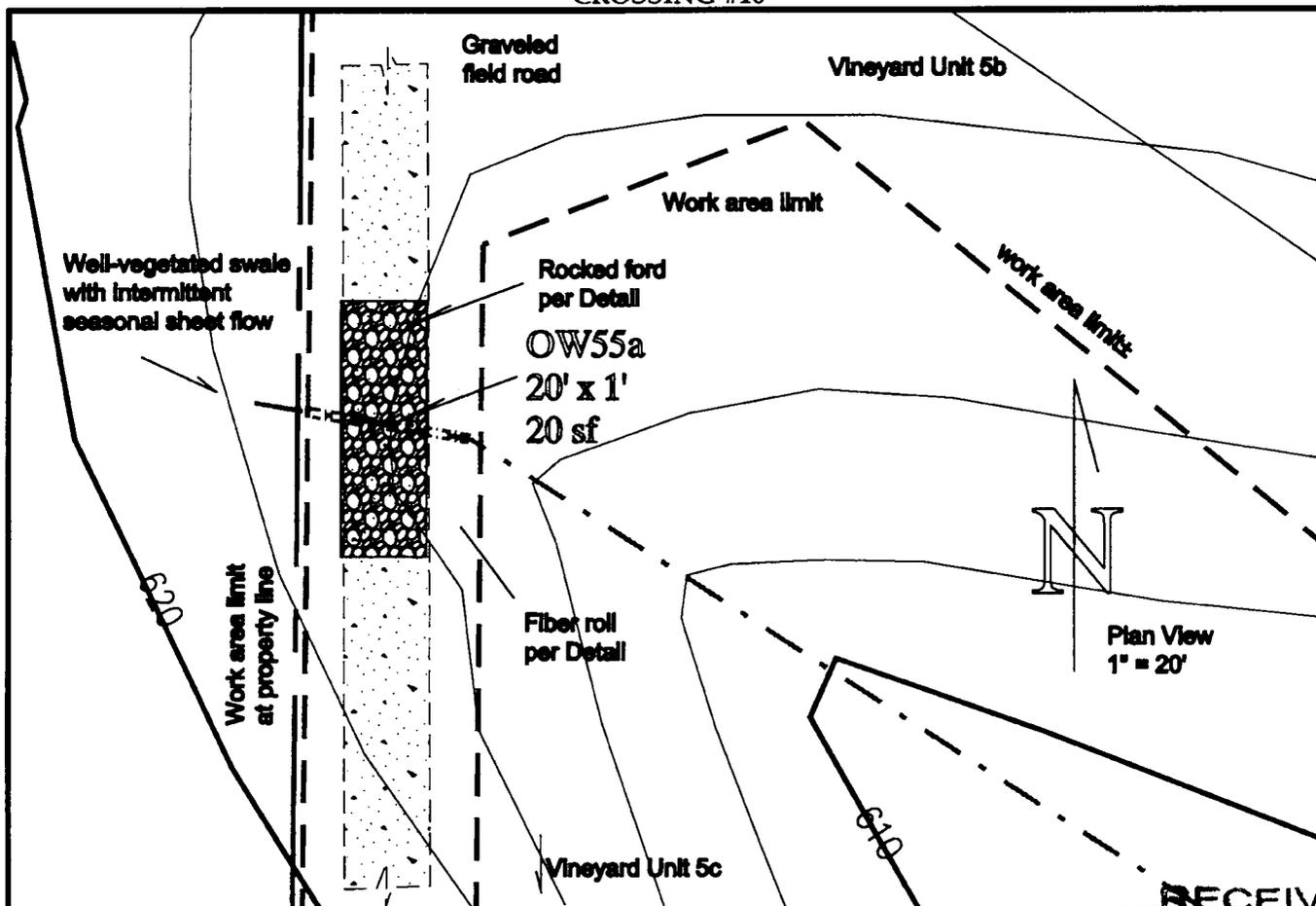
By: _____ (Signature)

_____ (Date)

_____ (Printed Name)

_____ (Title)

CROSSING #10



RECEIVED

LEGEND

- Contours
- Property limit:
- Work area limit
- Fiber roll
- Other Waters
- Rock armor

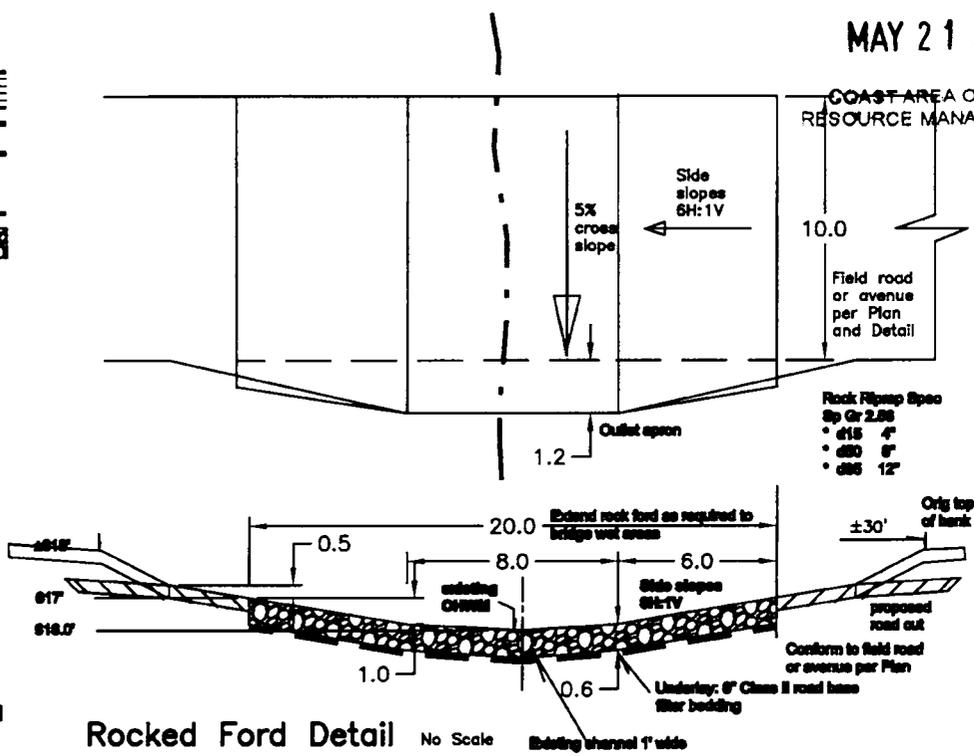
MAY 21 2010

COAST AREA OFFICE
RESOURCE MANAGEMENT

Rocked ford shall be installed prior to undertaking THP or vineyard development operations in Unit 5b.

CORPS - Below OHWM
±20 sq ft (1' x 20') Work area
±1 cu yd (1'x20'x1.3')/27ft³/cy
Fill ±0.05 cylindrical ft
Channel width per Corps jurisdictional map.

CDFG - Below Top of Bank
±360 sq ft (30' x 12') Work area
±360 sq ft vegetation removal
±9 cu yd (12'x15'x1.3')/27ft³/cy fill



- Rock Riprap Spec Sp Gr 2.85
- #15 4"
- #20 6"
- #25 12"

Rocked Ford Detail No Scale

Artesa Winery
1345 Henry Road
Napa CA 94559

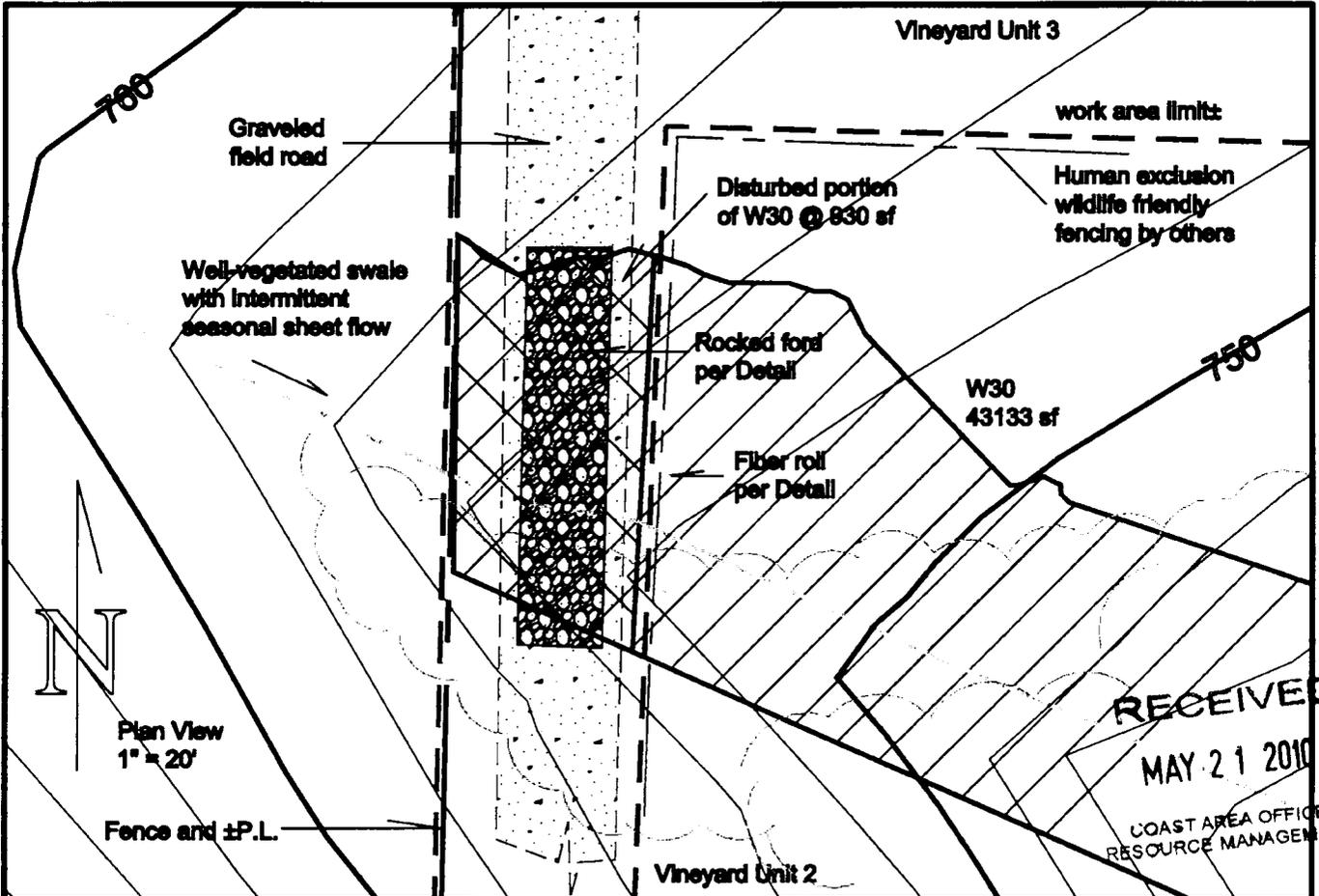
Fairfax Vineyard
35147 Annapolis Road
Annapolis CA 95412

Unit 5a - 5b
Rocked Ford
Crossing

Erickson Engineering Inc.
Valley Ford CA 94972-0446
707/795-2498 Voice/Fax

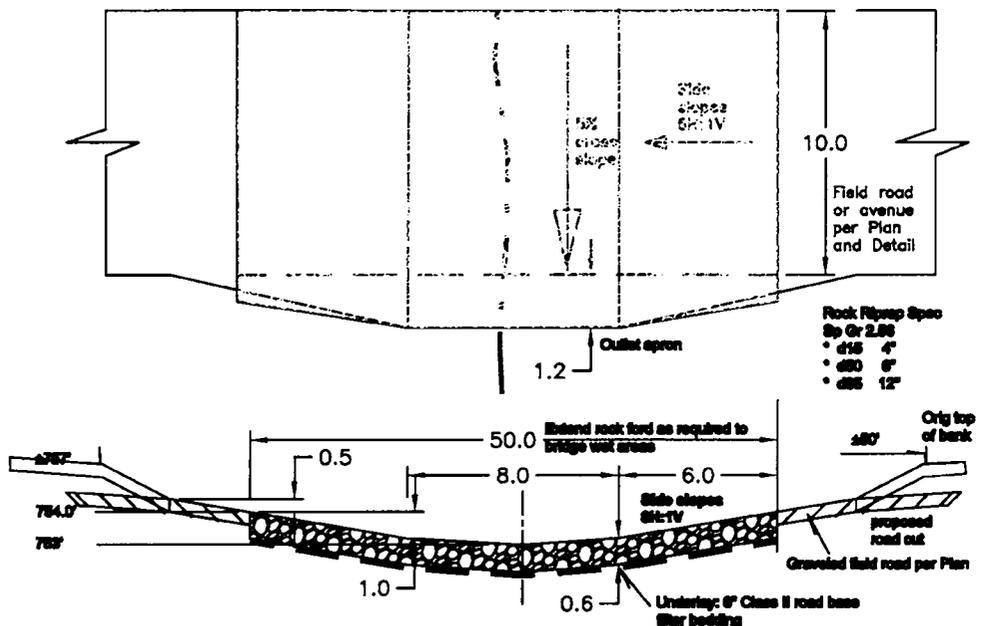
05.18.2010
00518 vvd.dwg
Scale: noted
C10

CROSSING #11



LEGEND

- Contours
- Property limit
- Work area limit
- Fiber roll
- Rock armor
- Wetland per Corps



Rocked ford is outside THP area and shall be installed prior to undertaking vineyard development operations in Unit 3.

Rocked Ford Detail No Scale

Artesa Winery
1345 Henry Road
Napa CA 94559

Fairfax Vineyard
35147 Annapolis Road
Annapolis CA 95412

Unit 2-3
Rocked Ford
Crossing

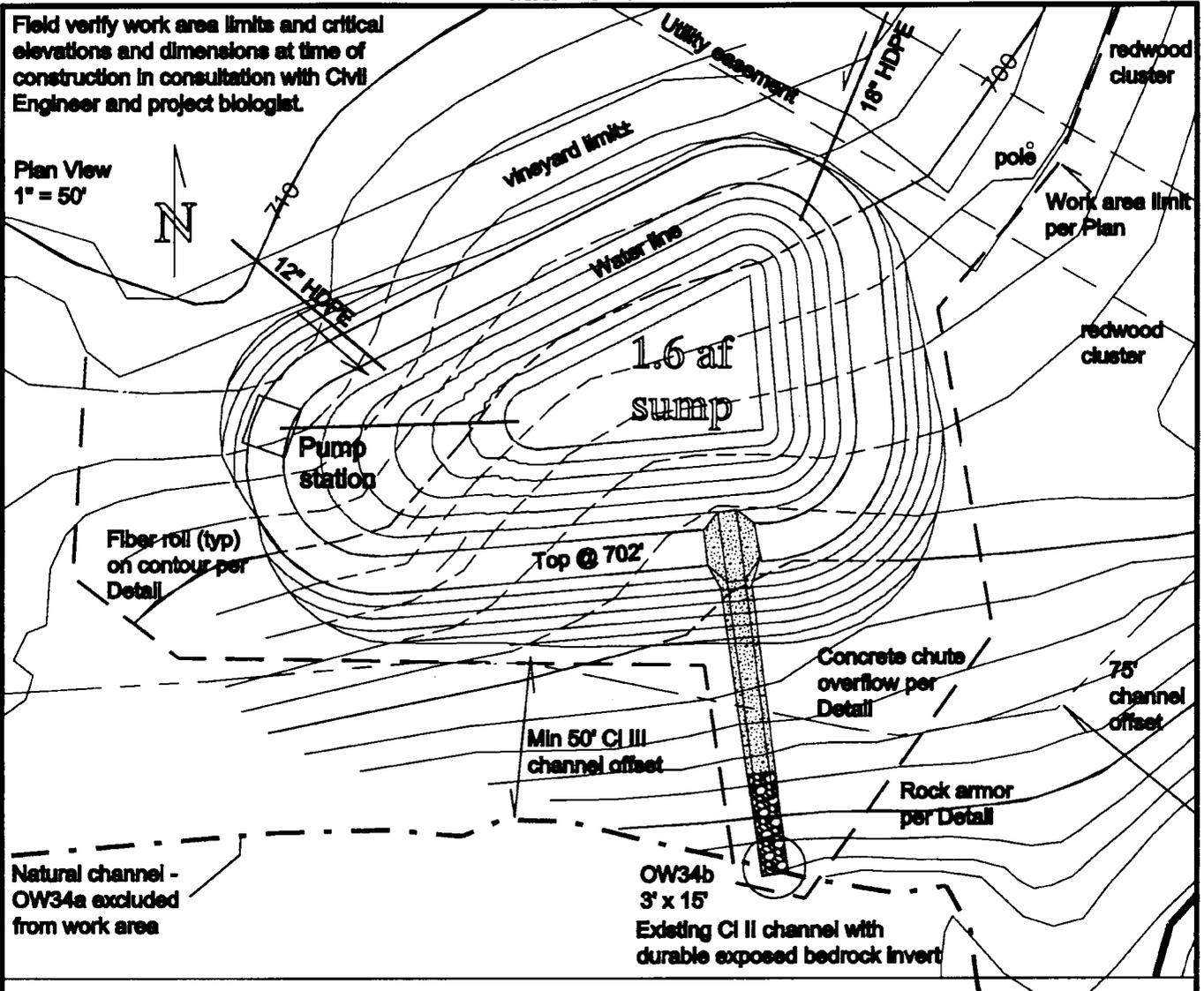
Erickson Engineering Inc.
Valley Ford CA 94972-0446
707/795-2498 Voice/Fax

08.18.2010
00518 vyl.dwg
Scale: noted
C9

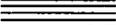
MAP POINT #12

Field verify work area limits and critical elevations and dimensions at time of construction in consultation with Civil Engineer and project biologist.

Plan View
1" = 50'



LEGEND

- Contours 
- Work area limit 
- Fiber roll 
- Other Waters 
- Rock armor 
- Concrete 
- Wetland per Corps 

CORPS - Below OHWM
±45 sq ft (3' x 15') Work area
Channel width per Corps Jurisdictional Map

CDFG - Below Top of Bank
±300 sq ft (20' x 15') Work area
±300 sq ft vegetation removal/replacement

Seed disturbed areas per Erosion Control Plan requirements. Cover with clean weed free small grains straw @ 4000 lb/ac.

RECEIVED

MAY 21 2010

COAST AREA OFFICE
RESOURCE MANAGEMENT

Artosa Winery
1345 Henry Road
Napa CA 94559

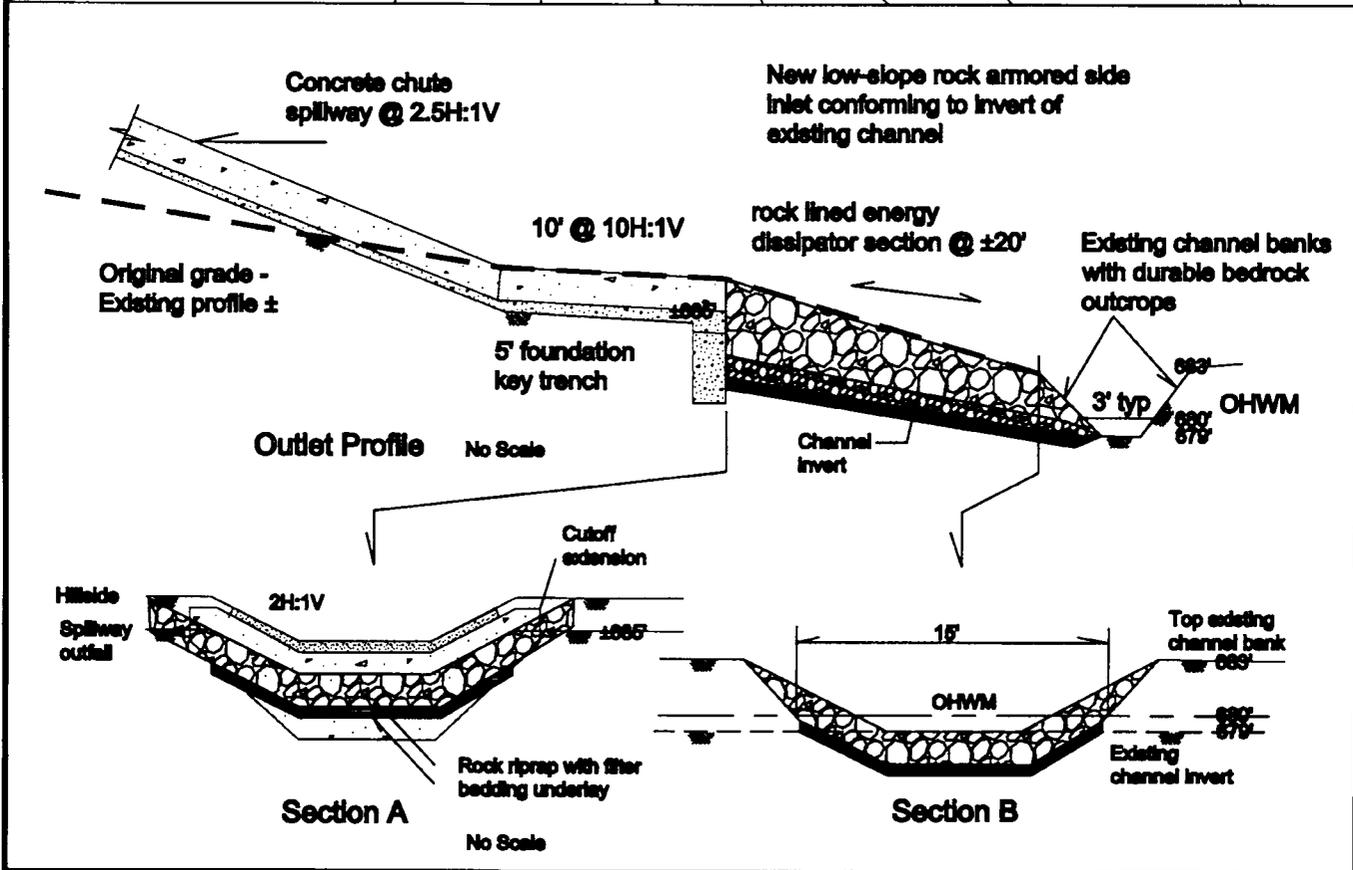
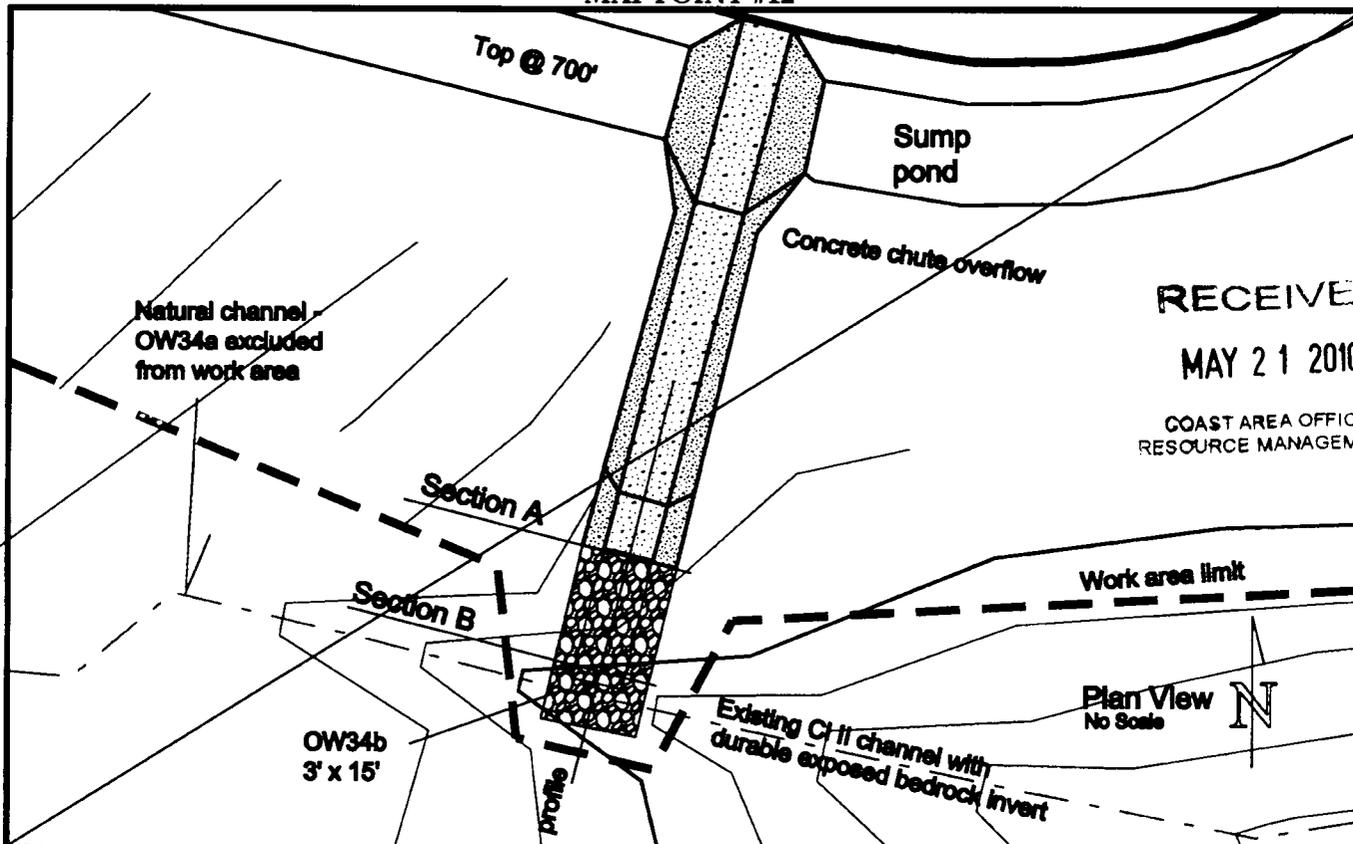
Fairfax Vineyard
35147 Annapolis Road
Annapolis CA 95412

Unit 2 - Sump
and Spillway

Erickson Engineering Inc.
Valley Ford CA 94972-0446
707/795-2498 Voice/Fax

05.18.2010
00518 vyd.dwg
Scale: noted
C13.1

MAP POINT #12



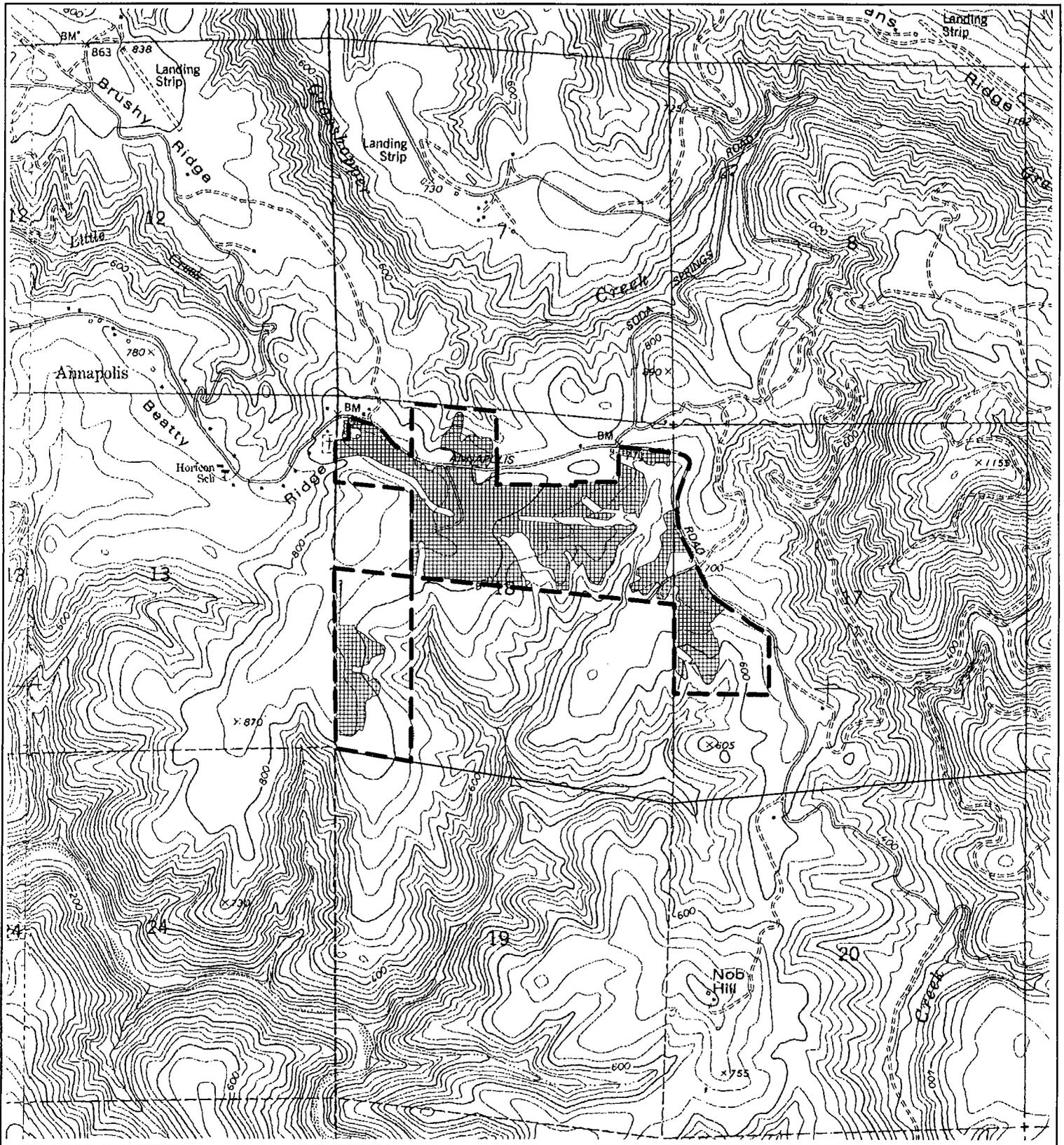
Artesa Winery
1345 Henry Road
Napa CA 94559

Fairfax Vineyard
35147 Annapolis Road
Annapolis CA 95412

Sump Spillway
Outfall Detail

Erickson Engineering Inc.
Valley Ford CA 94972-0446
707/795-2498 Voice/Fax

05.18.2010
00518 vyl.dwg
Scale: noted
C13.2



Fairfax Timberland Conversion

January 20, 2011

Vicinity Map

RECEIVED

T10N R13W MDB&M
 Portions of Sections 17&18
 Annapolis 7.5' USGS Quad

JAN 20 2011

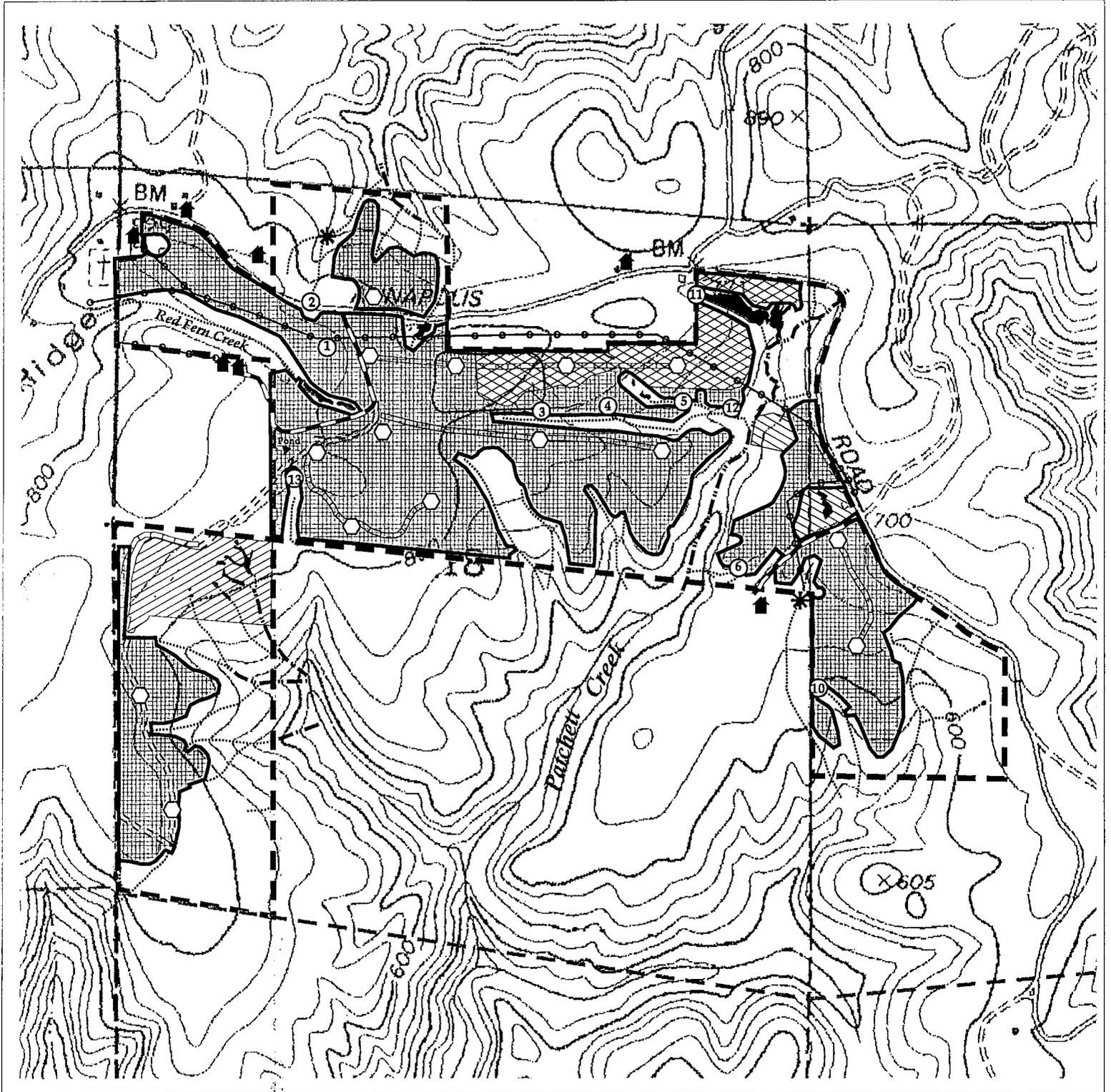
Property Boundary: 
 Project Area: 

PART OF PLAN

COAST AREA OFFICE
 RESOURCE MANAGEMENT



Scale 1:24000
 1" = 2000 ft



- Property Boundary:
- Vineyard/Project Area:
- THP/Conversion Area:
- Meadow/Non-timberland Area:
- *All areas of the property not contained in the Vineyard/Project Boundary will be included in a permanent habitat or streamside reserve.
- Horkelia Reserve:
- Manzanita Reserve:
- Existing Permenant Road:
- Existing seasonal Road:
- Proposed Temporary Road:
- Landing Location:

Fairfax Timberland Conversion
Operations Map

January 20, 2011

RECEIVED

JAN 20 2011

COAST AREA OFFICE
RESOURCE MANAGEMENT

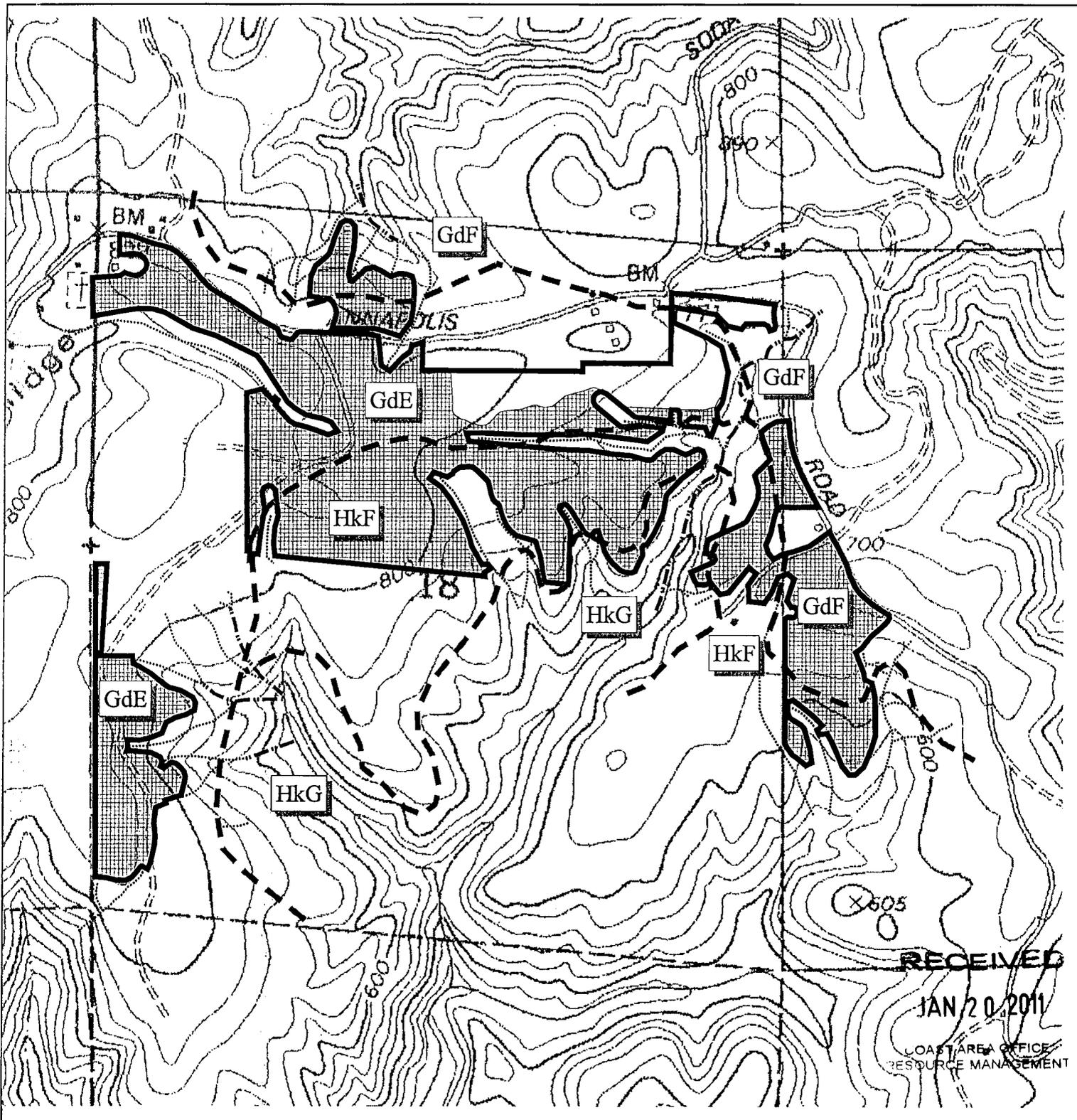
T10N R13W MDB&M
Portions of Sections 17&18
Annapolis 7.5' USGS Quad

- Comment Point:
- Structure:
- Powerline:
- Class II Watercourse:
- Class III Watercourse:
- Reservoir location:
- Wetland Areas:
- Domestic Water Supply:

PART OF PLAN

Scale 1:12,000
1" = 1,000ft





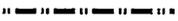
Vineyard Boundary: 
 THP/Conversion Boundary: 

Fairfax Timberland Conversion
 Soils Map

January 20, 2011

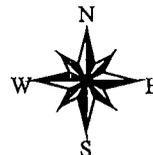
Soil Type Boundary: 
 GdE: Goldridge fine sandy loam 15-30% slopes
 GdF: Goldridge fine sandy loam 30-50% slopes
 HkF: Hugo very gravelly loam 30-50% slopes
 HkG: Hugo very gravelly loam 50-75% slopes

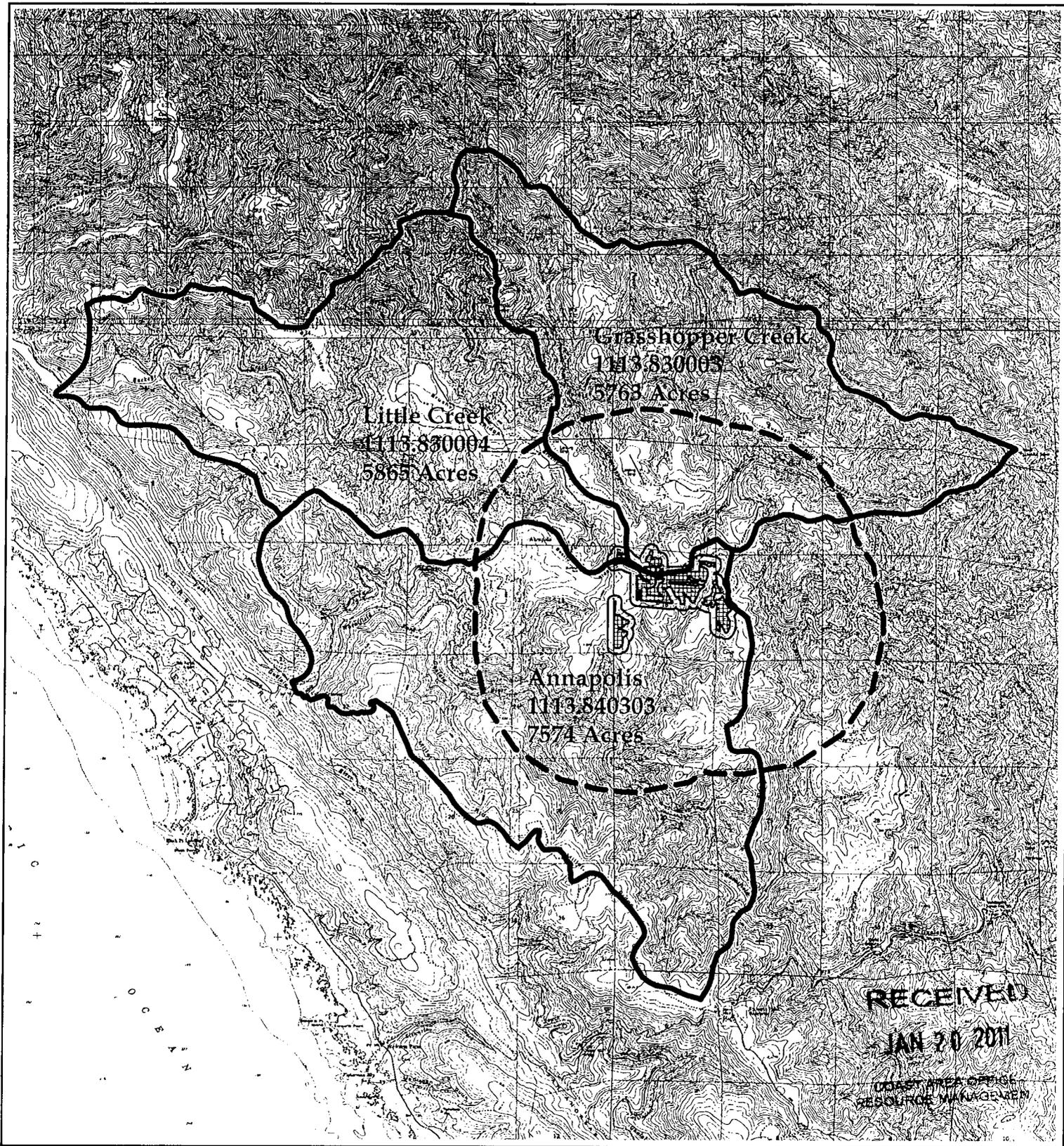
T10N R13W MDB&M
 Portions of Sections 17&18
 Annapolis 7.5' USGS Quad

Class II watercourse: 
 Class III watercourse: 

PART OF PLAN

Scale 1:12000
 1" = 1000 ft





Fairfax Timberland Conversion
Cumulative Impacts Map

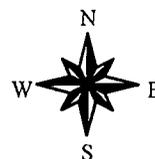
January 20, 2011

- Watershed Assessment Area: 
- Biological Assessment Area: 
- Project Area/Soils Assessment Area: 
- Recreational Assessment Area: 

T10N R13W MDB&M
Portions of Sections 17&18
Annapolis 7.5' USGS Quad

PART OF PLAN

Scale 1:80,000
1" = 1.26 miles



Section III

GENERAL DESCRIPTION OF PLAN AREA

PROJECT LOCATION:

The project site is located approximately 0.5 to 0.75 miles southeast of the town of Annapolis and five miles east of the Pacific Ocean. The site is located within Sections 17 and 18, T10N, R13W, MDB&M, and is found on the U.S. Geological Survey 7.5 minute *Annapolis* quadrangle.

SOILS AND TOPOGRAPHY:

The plan area is located on a broad flat ridge (Beatty Ridge) between Grasshopper Creek and the Wheatfield Fork of the Gualala. Slopes on the plan area are generally south and east facing and range from 2 – 35% with an average of 11.7%. Elevation within the plan area ranges from 660 feet to 860 feet above sea level.

U.S. Geological Survey (USGS) Santa Rosa Quadrangle Map 2A indicates that much of the Sonoma coastal area is located within a large-scale block described as the early Tertiary era Coastal Belt Franciscan Formation (TKf), identified by subsurface geology consisting of marine sandstone, shale, and conglomerate typical of adjacent ridge-top uplands. This formation is frequently found on northwest trending major ridges in the interior Coastal Range area in northern Sonoma County. Portions of the area are capped by more recent Pliocene age Ohlson Ranch Formation (Por) subsurface geology consisting of marine sandstone, siltstone, and conglomerate. Based on the presence of marine sandstones and undamaged fossilized seashells commonly found at relatively shallow depth in local profiles, the area is considered to have been uplifted from sea beds as part of the tectonic activity forming this part of California.

Surficial soils in the project area have been mapped by the U.S. Department of Agriculture (USDA) Soil Conservation Service, and are shown on Sheet 16 of the *Soil Survey of Sonoma County, California*. Area soils have been mapped as predominantly Goldridge fine sandy loam with 15 to 30 percent slopes (GdE), which consist of moderately well-drained fine sandy loams that have a sandy clay loam subsoil and are formed from coarse-grained, weakly consolidated sandstone (See THP Soils Map). GdE soils are generally located on uplands inland from the coast, extending from Sebastopol to the Annapolis area, and are found in association with Blucher, Cotati, Sebastopol, and Steinbeck soil types. Other site soils include Goldridge fine sandy loam, 30 to 50 percent slopes (GdF); Hugo very gravelly loam, 30 to 50 percent slopes (HkF); and Hugo very gravelly loam, 50 to 75 percent slopes (HkG). The Goldridge soil is approximately 16 inches deep, light brownish gray in color, strongly acidic, with light gray, pale yellow, and yellow-brown subsoils. Permeability is moderately slow in the subsoil. Runoff is medium to very rapid, with moderate erosion hazard on low slopes and increasing to a high level on elevated slopes. The Hugo very gravelly loam formed in material weathered from fine-grained sandstone or shale. Permeability is moderate and soil depth ranges from 30 – 60 inches. The calculated erosion hazard rating for these soils on the plan area is moderate.

The local soils are believed suitable for vineyard development, based on historical and ongoing agricultural activity in similar upland soils in the region. Soil amendments are typically applied in response to soil testing, in order to moderate acidity. Nutrients are applied to vineyards on an as needed basis through foliar or irrigation methods, based on annual monitoring results. Satisfactory levels of surface drainage and permanent cover crop development will be necessary to prevent formation of sheet and rill erosion.

The *Baseline Soil Analysis* also notes moderate to extensive subsoil rust mottling in the project site soils. Rust mottles form from decomposition of organic matter under anaerobic conditions. Mottles are commonly found in soils that are seasonally very wet (near saturation) for an extended period of time. The finding of mottled soils on the project site is not considered unusual due to the very high annual rainfall in coastal Sonoma County. According to Crop Care Associates, the mottling indicates the need for installation of artificial subsurface drainage in vineyard development.

No unstable areas were observed on the conversion THP area during plan preparation. Erosion observed on the plan area consists of those seven locations identified under Item #18 in Section II of the THP. These erosion sites are identified on the THP Operations Map. Slopes on the plan area are moderate and appear to be stable as very little erosion was observed on the plan area.

The timber site productivity of these soils on the plan area is moderate. The plan area is classified as site III timberland.

Please see Chapter 3.6 of the project THP and the attached Erosion Control and Mitigation Plan and Baseline Soils Analysis for a further description of the soils and geologic setting.

WATERSHED AND STREAM CONDITIONS:

A majority of the conversion THP area is contained within the Annapolis CAL Watershed (#1113.840303). A small portion of the plan area (approximately 14 acres) lies within the Grasshopper Creek CAL Watershed (#1113.830003) and another very small portion (approximately 2 acres) lies within the Little Creek CAL Watershed (#1113.830004). The watercourses in the northwestern portion of the plan area drain into Grasshopper Creek, and then into Buckeye Creek. Watercourses in the southern portion of the plan area drain into Patchett Creek and then the Wheatfield Fork of the Gualala River. The entire plan area ultimately drains into the South Fork of Gualala River, which drains into the Pacific Ocean.

There are no watercourses contained within the project area. There are however, a number of Class III and Class II watercourses adjacent to the project area. As per 14 CCR 916.4 a field evaluation was conducted of all watercourses within the vicinity of the project area and it was determined that the proposed mitigation measures will minimize impacts to these watercourses. The watercourses on the plan area were walked, classed and checked for erosion, channel stability, canopy cover, LWD and aquatic habitat.

As the plan area is located along the top of a broad flat ridge, the watercourses adjacent to the plan are mainly the headwater portions of larger drainages located further downstream. The watercourses generally have a gentle gradient, have shallow channels, and only seasonally run water. Other than those areas described under Item 18 in Section II the stream channels are stable with varying amounts and types of streamside vegetation. Canopy cover ranges from 0-100% with a large majority of the watercourses containing an average canopy of greater than 70%. The Class III watercourses contain limited amounts of LWD, little to no pool structure and no aquatic habitat. The Class II watercourses contain limited amounts of aquatic habitat with only slightly more pools and LWD. These watercourses are in fair to good condition and will be protected by WLPZs within which no timber operations will occur. Please see the Cumulative Impacts Assessment and Chapter 3.7 of the EIR for a further discussion of Watershed Conditions.

VEGETATION AND STAND CONDITION:

As described in the Monk & Associates *Biological Resources Analysis* (Chapter 3.4 of the project EIR), the project site contains examples of five plant communities: North Coast Coniferous Forest, Northern Coastal Grassland, Coastal Scrub, Riparian Vegetation, and Seasonal Wetlands. The main components of the plant community within the THP area consist of *Sequoia sempervirens*, *Pseudotsuga menziesii*, *Lithocarpus densiflorous*, *Arbutus menziesii* and *Vaccinium ovatum*.

The plan area has had a long history of resource use. The plan area was converted to agriculture use in the late 1800's to early 1900's. It was used for orchards and sheep grazing until the 50's and remnants of the old orchards still exist on the plan area today. The areas that were managed for sheep grazing currently consist of grassland and hardwoods with intermediate conifers. The forested areas of the plan generally consist of a even aged stand of younger (50-75 year old) conifer timber with a fairly even mix of redwood and Douglas fir. There are areas of these stands where tanoak is a major component and areas where there is a very thick brush understory.

For a complete discussion of the vegetation on site please refer to Chapter 3.4 of the project EIR.

ELABORATION ON ITEMS IN SECTION II**Item 24 f) and k): Abandonment of Roads and Landings**

Explanation: With the exception of the two existing permanent roads shown on the THP Operations Map all truck roads, tractor roads and landings located within the project area used to remove timber from the conversion THP area will be abandoned following completion of timber harvest operations. An abandonment plan will not be drafted for the abandonment of these facilities as they will be eliminated as a part of vineyard development. Soil stabilization measures associated with the grading of these areas are covered in detail in the Erosion Control Plan.

Justification: The conversion THP area will be developed for wine grape production, therefore roads and landings used to access the timber on the plan area will no longer be needed. Roads, landings and tractor roads located within the conversion THP area will be ripped, disced and planted to grapes following the completion of timber operations. Vehicle access to the vineyard units will be via encroachments at the existing permanent roads that access the conversion plan area/vineyard units and then along "vineyard avenues" within the vineyard units and new perimeter roads.

Fairfax Conversion THP Sensitive Plant Preserve Monitoring & Management Plan

In accordance with CDFG *Guidelines for Conservation of Sensitive Plant Resources Within the Timber Harvest Review Process and During Timber Harvesting Operations*, this mitigation monitoring plan has been prepared for the sensitive plant preserves and the wetlands that will be created on site. The mitigation monitoring plan will ensure that timber operations are conducted consistent with the protection measures specified in the THP and the mitigation measures specified in the EIR.

This project complies with the CDFG's *Guidelines for Conservation of Sensitive Plant Resources Within the Timber Harvest Review Process and During Timber Harvesting Operations*. Below we present the guidelines for Mitigation and Monitoring (in italics) and discuss how the project complies with or is modified herein to comply with these guidelines (in plain text).

CEQA and the Forest Practice Rules require that if there is a potential to significantly impact sensitive plants, then measures to avoid or mitigate these impacts must be proposed. When developing plant protection measures, plan preparers should consider both the specific mechanisms by which the proposed operations could impact each plant species, and the best available information about its habitat needs and life requisites. Impacts to sensitive plants can often be avoided by careful planning and implementation of the project activities, by avoiding the habitat, or by protecting the population and associated habitat. Impacts may be reduced by partial avoidance of the population and associated habitat. DFG will recommend appropriate mitigation measures during THP review. Examples of such measures may include, but are not limited to: Modification of timber operations to better suit the habitat requirements and to ecologically benefit the plant in question.

Establishment of a large enough area around the population to clearly delineate the location of the occurrence area (a buffer zone) to protect the population from potential impacts. The buffer should be of adequate size to preserve connectivity between populations, pollinator ecology, and provide for natural expansion and contraction of the occurrence area due to natural perturbations at the site. Directional falling of timber away from the area. Designation of an equipment exclusion zone or equipment limitation zone around the occurrence, as appropriate. Retention of the overstory canopy in the buffer area (for shade and/or mesic dependent species). Maintenance of site hydrology. Exclude site preparation or herbicide application in or in close proximity to the occurrence area. Establishment of off-site mitigation for permanent protection. Additional or alternative measures may be needed depending on the species, the site, and the specific operations proposed.

Great efforts have been extended to protect sensitive plants. Specifically, a Horkelia Preserve and two Annapolis Manzanita Preserves are established as part of the proposed project. Please note that the project site is 324 acres and the footprint of the total proposed project is 173 acres. The remaining 151 acres of the project site will be set aside/preserved in permanent deed restrictions that follow the title of the land in perpetuity. Thus, approximately 47 percent or nearly one-half of the project site will be preserved permanently to protect biological resources. This is an outstanding preservation plan that far exceeds industry standards.

Monitoring (CDFG 2005)

Pursuant to CEQA Section 21081.6 and Guidelines Section 15097, when a lead agency adopts a mitigation for significant effects, the agency is required to adopt either a monitoring or reporting program for the mitigation measures in order to ensure compliance during project

RECEIVED

JAN 20 2011

COAST AREA OFFICE
RESOURCE MANAGEMENT

implementation. CEQA requires that the mitigation or avoidance measures be fully enforceable. Therefore, compliance monitoring and/or reporting is usually needed to ensure timber operations are carried out consistent with the protection measures specified in a THP. DFG encourages landowners to conduct or otherwise participate in effectiveness monitoring to determine the adequacy of the implemented protection measures. DFG is interested in working with landowners to help design and conduct effectiveness monitoring whenever time and resources permit. Such monitoring will enable both landowners and reviewing agencies to learn from their actions, to increase the often limited ecological knowledge about sensitive plants, and to improve future management strategies and recommendations. DFG recommends the following be considered and/or included when designing monitoring projects:

Consult with DFG regarding the study design before implementation. Determine the roles of the landowner, the forester, consultants, DFG, and CDF in the monitoring effort. DFG generally does not support mitigation strategies for sensitive plants that use transplantation, relocation, or reintroduction. A review of these strategies indicated a success rate of less than 15% (Fiedler 1991). Transplantation of populations (especially the seed bank) should be conducted only as a last resort or in conjunction with other mitigation strategies.

Involve an individual familiar with the species, associated plant species, vegetation and habitat types, and measuring and monitoring methods when designing data collection. Implement a field monitoring scheme to enable an assessment of the impacts and effectiveness of the protection/mitigation measures. This may include treatment and control plots. Monitor before and for at least three to five years after timber operations and/or vegetation management. Utilize a data sheet for the collection of standardized data, and establish repeatable photo points that depict both the habitat and the species. Apprise DFG of the monitoring program's progress and findings through interim and final reports.

Per the guidelines stated above, CDFG is required to ensure that *there is a monitoring or reporting program for prescribed mitigation measures*. Thus while a mitigation and monitoring plan is warranted for the proposed project's impacts to wetlands, to thin-lobed horkelia, and to Annapolis manzanita, an "Adaptive Management Plan" is not. Please note that there have been relatively few "adaptive management plans" that have been successfully implemented and typically it has been by the Federal and/or State Government for very large-scale projects. We believe that a five year mitigation monitoring plan that contains both monitoring requirements and remedial actions in the event that success criteria are not met by the mitigation features after five years is an appropriate level of mitigation, monitoring, and reporting. The CDFG guidelines require at least three to five years of monitoring after timber operations and/or vegetation management. Thus, we present a five-year mitigation and monitoring program which is the maximum recommendation in the CDFG's Guidelines. We believe this time frame is consistent with most monitoring projects required by the resource agencies.

In review, we present the elements of the proposed biological resources mitigation and monitoring plan as follows: As detailed in the DEIR in Section 3.4-15, a wetland mitigation plan is incorporated into the project description and would be implemented over a five year period. Impacts to wetlands would be compensated for at a 2:1 ratio, or for each square foot of impact to wetlands or "other waters," two square feet of new wetlands or "other waters" (relative to the impacted feature) would be created. The mitigation prescription in the DEIR stated that in total 0.414-acre of waters of the United States and State would be impacted by the proposed project. Owing to further resource agency review and requirements for the project, impacts to waters of the U.S. and State is now reduced to 0.301 acres. Accordingly, in total 0.602 acres of new wetlands and/or other waters (relative to the impact) must be constructed on the project site.

PART OF PLAN E-32. 2

RECEIVED

MAY 21 2010

May 19, 2010

COAST AREA OFFICE
RESOURCE MANAGEMENT

Annual monitoring and reporting of the performance of the created wetlands shall be required. Monitoring reports shall be submitted to the RWQCB and the Corps annually. At the end of the five year monitoring period a determination shall be made by the Corps that the created wetlands have or have not met criteria to be mapped as seasonal wetlands or other waters of the U.S. and State. In the event that mitigation wetlands are determined not to meet wetland criteria established in the Corps 1987 Wetland Delineation Manual in combination with the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region the project sponsor shall be required to complete remedial actions expected to correct deficiencies, or otherwise shall be required to purchase mitigation credits from a qualified wetlands mitigation bank as approved by the Corps and RWQCB.

All other impact and mitigation requirements presented in the DEIR Section 3.4-15 and modified above remain in force. This mitigation prescription reduces impacts to waters of the U.S. and State to a level regarded as less than significant pursuant to the CEQA.

Regarding impacts to thin-lobed horkelia and Annapolis manzanita, neither plant is protected under either the State or Federal Endangered Species Acts and/or protected pursuant to any special state or federal regulation or law. Establishment of the 15.6 acre Horkelia Preserve in combination with the immediately adjacent 18.5 acre Class III set-aside, is a generous mitigation prescription for the few Horkelia plants that might be impacted by the proposed project. Similarly, the 4.4 acres of permanent set-aside for Annapolis manzanita is again a generous mitigation prescription for a plant that has not been formally described as a species. Nor is it protected under either the State or Federal Endangered Species Acts and/or protected pursuant to any special state or federal regulation or law.

Regardless, in consideration of CDFG's request for monitoring above the proposed mitigation for impacts to minor numbers of thin-lobed horkelia and Annapolis manzanita, a five-year monitoring plan will commence upon completion of the vineyard. This monitoring shall be completed concurrently with mitigation wetland monitoring. Vegetation analyses shall be completed in each preserve and relative and total cover indices shall be collected each year for both sensitive species over the five year monitoring period. Methods for monitoring and reporting requirements are presented as follows:

To determine if the Horkelia and Manzanita Preserves are successfully supporting Annapolis Manzanita and thin-lobed horkelia, the project sponsor shall have a qualified biologist conduct five years of plant monitoring. Annual spring sampling will be conducted when thin-lobed horkelia is in flower. Generally this species is in flower throughout its range between the months of May, June, and July. In 2009, thin-lobed horkelia was in full bloom in the proposed Horkelia Preserve in mid-June. As Annapolis manzanita is a woody perennial plant, it can be monitored at any time of the year, so surveys that are conducted concurrently with thin-lobed horkelia monitoring are acceptable.

Monitoring shall included establishing fixed line sampling transects. In this fashion, trends in the plant communities can be ascertained. Sampling along fixed transects shall occur using a point intercept method derived from Bonham to demonstrate and quantify the extent of cover of the monitored species. The systematic point-intercept sampling method will be used to determine the frequency of plant species or group of plant species in the community. Transects will be established in the Horkelia and two Annapolis Manzanita Preserves.

RECEIVED

MAY 21 2010

May 19, 2010

PART OF PLAN

E-32. 3

COAST AREA OFFICE
RESOURCE MANAGEMENT

The frequency of plants observed in each transect shall be used to calculate total cover as follows:

$$\% \text{ plants in community} = \frac{\text{Number of points with plant cover counted along transect 'Y'}}{\text{Total number of points along transect 'Y'}} * 100$$

% non-vegetative material (bare ground, open water, etc.) = 100 - % plants in community.

The frequency of each plant species or group of plant species observed in the plant community along each transect should then be used to calculate relative cover as follows:

$$\% \text{ of plant "X" in community} = \frac{\text{Number of points with plant "X"}}{\text{Number of points for all plant species counted along transect 'Y'}} * 100$$

Plant cover data for the monitored species shall be arrayed each year and compared. Because of normal stochastic fluctuations in all plant populations, only precipitous drops in cover of the monitored species shall be cause for further investigation. Plant cover data shall be arrayed over the five year monitoring period to determine population trends for the monitored plants. If the trend is significantly down, remedial actions that include developing possible reasons for population declines shall be ascertained and remedial actions that could reverse trends shall be taken. Weather conditions such as drought and similarly acts of God such as fire that cause precipitous population declines shall not constitute sufficient reason to take remedial actions. Any proposed remedial actions shall be discussed with CDFG in advance of the implementation of such measures.

At the end of each monitoring year, a monitoring report shall be submitted to the CDFG. At the end of the five year monitoring period, CDFG shall be invited to examine the plant preserves to further go over conclusions presented in the final five year monitoring report. At the end of the five year monitoring period, provided the preserves are supporting stable Annapolis manzanita and thin-lobed horkelia populations, all monitoring requirements shall terminate.

The establishment of the Horkelia and Manzanita Preserves, and the amended mitigation prescription for monitoring and reporting population trends of thin-lobed horkelia and Annapolis manzanita within the Preserves, reduces project-related impacts to these plants to an extent regarded as less than significant pursuant to the CEQA.

RECEIVED

MAY 21 2010

COAST AREA OFFICE
RESOURCE MANAGEMENT

PART OF PLAN E-32. 4

May 19, 2010

STATE OF CALIFORNIA - BOARD OF FORESTRY
CUMULATIVE IMPACTS ASSESSMENT

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

Yes X No

If the answer is yes, identify the project(s) and affected resource subject(s).

Past, present and future projects are described below within the specific assessment area discussions.

(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

If the answer is yes, identify the project(s) and affected resource subject(s).

Continuing, significant adverse impacts from past land use activities are described below within the specific assessment area discussions.

(3) Will the proposed project as presented, in combination with past, present, and reasonable foreseeable probable future projects identified in items (1) and (2) above, have a reasonable potential to cause or add to significant cumulative impacts in any of the following resource subjects?

	<u>Yes after mitigation (a)</u>	<u>No after mitigation (b)</u>	<u>No reasonably potential significant effects (c)</u>
1. Watershed	_____	X	_____
2. Soil Productivity	_____	X	_____
3. Biological	_____	X	_____
4. Recreation	_____	_____	X
5. Visual	_____	_____	X
6. Traffic	_____	_____	X
7. Other	_____	_____	X

- a) Yes, means that potential significant adverse impacts are left after application of the forest practice rules and mitigations or alternatives proposed by the plan submitter.
- b) No after mitigation means that any potential for the proposed timber operation to cause significant adverse impacts has been substantially reduced or avoided by mitigation measures or alternatives proposed in the THP and application of the forest practice rules.
- c) No reasonable potential significant effects means that the operations proposed under the THP do not have a reasonable potential to join with the impacts of any other project to cause cumulative impacts.

ASSESSMENT AREA DESCRIPTIONS:

1. Watershed: A majority of the conversion THP area is contained within the Annapolis CAL Watershed (#1113.840303). A small portion of the plan area (approximately 14 acres) lies within the Grasshopper Creek CAL Watershed (#1113.830003) and another very small portion (approximately 2 acres) lies within the Little Creek CAL Watershed (#1113.830004). Therefore, the Annapolis CAL Watershed will be the main focus of this assessment, however, both the Grasshopper Creek and the Little Creek CAL Watersheds will also be considered. The combined area of all three watersheds is approximately 19,202 acres. The boundary for this watershed was chosen under the guidelines offered in 14 CCR 912.9 Technical Addendum #2. The reasoning for choosing this area was to account for all effects from activities that could conceivably interact with effects from this conversion THP to cause significant cumulative adverse impacts on the watershed.
2. Soil Productivity: The Soil Productivity Assessment Area is that area within the conversion THP boundary and all roads and landing located outside the boundary that will be used as a part of harvest operations as suggested in the "Cumulative Impacts Guidelines, August 13, 1991", page 10. This area was chosen as it encompasses all areas within which timber operations will occur. Timber harvest operations will not take place outside of this area, therefore the potential for adverse impacts to soil productivity does not exist beyond the plan boundary and associated timber harvesting facilities.
3. Biological: Biological assessment areas will vary with the species being evaluated and its habitat requirements. The biological assessment area for this conversion THP is the area within 1.3 miles of the THP, as this area is large enough (approximately 7,140 acres) to provide a representative sample of the different habitat types found in the vicinity of the proposed plan area. This assessment area as described is large enough to account for effects, on any species, that may be caused by this THP. In addition, this assessment area was chosen because it coincides with the survey area for the Northern Spotted Owl set forth in the Forest Practice Rules and any potential adverse impacts to wildlife will be diminished beyond the Biological Assessment Area.
4. Recreation: The Recreational Assessment Area will follow the guidelines stated in the Appendix to Technical Rule Addendum #2, which is the conversion timber harvest plan area plus 300 feet beyond the boundary.
5. Visual: The visual assessment area will include viewpoints within a three mile radius of the timber operations, however emphasis shall be placed on the visual impacts from Annapolis Road. As stated in Technical Rule Addendum #2, activities are not easily discernible at distances greater than three miles and are less significant. As such, the proposed visual assessment area is large enough to assess all of the potential visual impacts.
6. Traffic: Timber from this plan will be hauled from the plan area on either of the two following routes 1) via a private road system to Annapolis Road (a county road) then west to Highway 1 or 2) a private road system off the plan area to Annapolis Road (a county road) then east on Annapolis Road to Skaggs Springs Road (a county road), then east on Skaggs Springs Road to Dry Creek Road, and east on Dry Creek Road to State Highway 101. This road system will be considered the assessment area. This is consistent with Technical Rule Addendum #2.

1. Watershed Resources:

Past and Present Projects

The assessment area has a long history of human habitation. The main activities that have contributed past adverse impacts to the Watershed Assessment Area are wildland burning, agriculture/grazing, rural subdivisions, road building, and timber harvesting.

Wildland Burning

Early landowners appear to have burned the slopes periodically following the initial logging in an attempt to enhance livestock carrying capacity. The wildland burning, which occurred from before the turn of the century until the 1950s, definitely had a negative impact on the beneficial uses of water across the assessment area. Annual burning was conducted to increase the amount of grazing habitat and improve the quality of the grazing habitat. Burning during this period was also used in conjunction with clear cutting in the watershed assessment area. This burning reduced protective ground cover exposing large areas of soil to increased erosion potential. Conifer shade canopy along the watercourses of the assessment area must have been reduced as a result of repeated burning, thus leading to higher summer water temperatures. Reduced canopy levels across the timbered portions of the assessment area would have resulted in reduced water use by vegetation and a potential for increased peak flows.

The practice of broadcast control burning is still practiced within the watershed to a certain degree to control fuel loads and vegetative cover and for site preparation activities. Fires are usually set in early winter when burning conditions are suitable for low intensity controlled burns. Wildland burning however is not conducted on the same scale as it was in the past and is not used to increase grazing habitat.

Agriculture/Grazing

The watershed assessment area has a long history of agricultural use. Orchards existed along Annapolis Road from approximately 1920 to 1960. These orchards were left largely untended until the early 1990s when they started to be converted to vineyards and other uses. Grape production has continued to increase in this area in the last ten years due to the "discovery" of the high quality grape that is produced in this area. An on site, ocular review of the watershed assessment area indicates that most of the vineyard development that has occurred within the last six years has taken place within areas that were previously orchards or grasslands. As discussed above, a majority of the burning and clearing conducted in the past was intended to increase grazing habitat and improve the quality of grazing habitat. The amount of grazing throughout the assessment area has been significantly reduced.

Rural Subdivisions

The human population levels of the area have fluctuated in the past. Whenever there is human activity, there is potential for adverse effects on the environment. Human population growth affects all resources, either directly or indirectly, and increased pressure upon rural settings is a manifestation of those impacts. Accelerated erosion can occur from access roads and homesites. Chemical and biological pollutants can enter waterways from septic systems, gardens and roads. The increasing human population reduces the inventory of productive soils and disrupts wildlife.

It reduces wildland recreational opportunities and disrupts the visual resources. The county/state controls almost all land use activities with regulations designed to prevent significant adverse impacts.

Road Building

Road building is associated with all of the other past land uses discussed here. The sedimentation of watercourses is perhaps the greatest past and continuing impact within the watershed and a major contributing factor to that would be the construction and use of forest and ranch roads. Several sources including the Handbook for Forest and Ranch Roads (Weaver and Hagens 1994) and the Klamath Resource Information System, KRIS indicate that road failures can contribute both fine and coarse sediment to streams, and accumulated road failures in large storm events can have catastrophic effects, such as filling in pools and reducing habitat complexity. Studies cited within KRIS show that roads can contribute 50 to 80% of the sediment that enters streams and the amount of sediment delivered from forests with roads can be more than 300 times greater than from undisturbed forest land. Roads on ranch lands and those leading to rural and suburban parcels also contribute to sediment problems in a watershed. Surface erosion from roads can produce chronic sources of fine sediment, which can diminish salmon and steelhead spawning success. Roads constructed next to streams are chronic contributors of fine sediment, particularly if they are used in winter months. Winter logging exacerbates this problem because the truck wheels pump fines from within the roadbed to the surface. Fine sediment from roads that enters streams fills interstitial spaces in gravel streambeds, reducing survival of salmon and steelhead eggs and aquatic insects.

Road construction in the past was not regulated as it is now and resources such as the Handbook for Forest and Ranch Roads were not available. Roads were constructed within and next to streams and were commonly used during wet winter periods. The roads altered the drainage patterns of the watershed assessment area and proper watercourse crossing were not installed. Recognition of road and erosion problems in the Gualala River basin has led to a number of road improvement and erosion control projects in recent years. Two notable projects are the upgrading of Kelly Road and road erosion-proofing of the Fuller Creek basin. There are however many small rural landowners that continue to use road systems during wet periods and who conduct little or no upgrades to their road systems.

Timber Harvesting

Before the implementation of the Forest Practice Act of 1973, historic logging activities did not take into consideration, erosion, mass wasting or the watercourse protection issues that forest harvesting focuses on today. Early timber harvesting and the manufacturing of split products across the assessment area caused significant increases in the watershed effects described below and the beneficial uses of water were significantly adversely affected by these activities. Roads and skid trails were constructed either directly in or adjacent to watercourses resulting in sedimentation of the watercourses and reduction of shade canopy. Large increases in large woody debris and increased sediment inputs resulted in the storage of large amounts of sediment. As the woody debris begins to decay, stored sediment is moving through the watershed. Furthermore, lack of adequate erosion control on skidtrails, roads and watercourse crossings resulted in the deposition of large amounts of sediment and organic debris into the watercourse channels. Overall impacts from past timber management however, appear to have been beneficial. The

lands remain forested with various levels of regeneration dependent upon location. Diversity is wide within stands and forested cover. Incidental adverse impacts to watershed resources are more likely associated with road maintenance or primary log transport using watercourses rather than harvesting per se.

Recently, timber harvesting operations have been conducted under the Z'berg Nejedly Forest Practices Act of 1973 and the rules of the Board of Forestry. Other agencies such as the Department of Fish and Game and Water Quality are also a part of the review process for proposed timber operations throughout the State of California. The education of timber operators and the development of new technologies have led to the significant improvement in road building, timber harvesting, and erosion control. These practices have led to continuing improvements in protecting environmental resources. Some improvements in the practice of forest management are in the following:

- The protection of watercourses by the use of buffer zones, protect beneficial uses of water and wildlife that depend on moisture and clean running water. These buffer strips maintain stream temperature and provide biomass to those organisms that feed on plant materials that are an essential part of the food chain within aquatic communities.
- Harvesting methods include skyline cable yarding and helicopters that keep tractors off of steep slopes and prevent logs from skidding on top soil that increases the potential for soil loss and/or erosion. These methods help protect watershed dynamics and sensitive geologic areas such as unstable soils and slopes.
- Wildlife monitoring and habitat identification is included in Timber Harvest Plans to help determine if federal or state listed endangered, threatened and/or species of concern are located within the proposed harvest area. If such species exist mitigations are required to protect appropriate habitat types. Available resource inventories and databases are used to determine local habitat characteristics that help assess the proposed harvest area is suitable habitat for any such listed species; (i.e., Stream Surveys from DFG, Higher Plants of California, California Native Plant Society, etc.).
- A Number of different harvesting prescriptions are used to create more diversity and watercourse protection that benefits stand dynamics and wildlife. Reforestation efforts are increasing to assure future inventory of harvest trees. Many small land owners and non-industrial timber lands are encouraged to increase that inventory of coniferous trees through such programs as the California Forest Improvement Program created by the Department of Forestry and Fire Protection.

These improvements have shown that a steady supply of forest products can be maintained while protecting forest resources.

Other than the proposed THP, no past, present or future timber harvesting projects occur on land owned or controlled by the timberland owner within the assessment area.

The following table includes a summary of the THPs filed within the assessment area within the past 10 years:

Silvicultural Methods:**SEL** - Selection**TRN**- Transition**SWR** - Shelterwood Removal**STSS**- Seed Tree Seed Step**REH** - Rehabilitation**ALT** – Alternative Prescription**STR** – Seed Tree Removal**CT**- Commercial Thin**CC**- Clearcut**VAR** – Variable Retention**SS**- Sanitation Salvage**GS**-Group SelectionLogging Method:**C** – Cable**T** – Tractor**FB** – Feller Buncher**H** – HelicopterComments:**1**- Completed**2**- Approved not yet completed**3** - Submitted Not Approved

THP#	Acres*	Silvicultural Method	Yarding Method	Comments	Location
Annapolis WAA					
1-08-124 SON	126	STR, SEL	T	2	T10N R14W Sec. 14
1-08-121 SON	206	VAR	C	3	T10N R14W Sec. 25
1-08-093 SON	112	VAR	T, C	3	T10N R13W Sec. 29 & 30
1-07-028 SON	185	ALT, REH	T, C	2	T10N R14W Sec. 24 T10N R13W Sec. 18 & 19
1-06-192 SON	200	ALT	T,C,H	2	T10N R13W Sec. 20, 28 & 29
1-06-110 SON	135	ALT, REH	T, C	2	T10N R14W Sec. 23,25,26&30
1-06-072 SON	110	STR, SEL	T,C	2	T10N R14W Sec. 25,26 & 35
1-05NTMP-017	120	SEL,GS,TRN,REH	T,C	2	T10N R14W Sec. 11 & 14
1-04-275 SON	50	SEL	T	2	T10N R14W Sec. 9, 15, 16 & 22
1-04-201 SON	35	CC,SEL,STR,SWR	T	2	T10N R14W Sec. 23 & 27
1-04-045 SON	296	TRN,ALT,REH,VAR,STR	T,C	2	T10N R13W Sec. 18, 19 & 20
1-04NTMP-001	62	SEL	T	2	T10N R14W Sec. 22, 23 & 26
1-03-008 SON	70	CC	T	1	T10N R14W Sec. 15, 16 & 22
1-02-174 SON	20	SEL	T	1	T10N R14W Sec. 10
1-01-202 SON	5	Conversion	T	1	T10N R13W Sec. 17
1-01-034 SON	50	STR	T	1	T11N R14N Sec. 25
1-00-468 SON	487	ALT,TRN,STR	T,C	1	T10N R13W Sec. 30, 31 & 32
1-00-129 SON	237	STR, ALT, REH	T, FB, C	1	T10N R14W Sec. 13, 24 T10N R13W Sec. 19
1-00NTMP-073	85	SEL	T	2	T10N R14W Sec. 11, 12, 13, 14
1-00NTMP-041	13	SEL	T	2	T10N R14W Sec. 10
1-99-390 SON	20	SEL	T	1	T10N R14W Sec. 18
1-99-354 SON	134	STR, CC, SWR	T, C	1	T10N R14W Sec. 9, 10, 15, 16
1-99-052 SON	197	STR, SS, REH	T	1	T10N R14W Sec. 25; T10N R3W Sec. 30, 31
1-99NTMP-021	38	SEL	T	2	T10N R14W Sec. 13
1-98-269 SON	82	CC	T, C	1	T10N R14W Sec. 14, 15, 22
Little Creek WAA					
1-08-078 SON	40	TRN	T, C	2	T10N R14W Sec. 11
1-06NTMP-009	210	GS	T, C	2	T10N R13W Sec. 7 T10N R14W Sec. 11&12
1-05NTMP-013	160	SEL	T,C	2	T10N R14W Sec. 4 & 5
1-04-059 SON	25	Conversion	T	1	T10N R13W Sec. 12
1-04-055 SON	8	Conversion	T	1	T10N R13W Sec. 12
1-04-030 SON	16	Conversion	T	1	T10N R14W Sec. 2
1-02-019 SON	18	Conversion	T	1	T10N R14W Sec. 2
1-01-243 SON	38	ALT	T	1	T10N R14W Sec. 10
1-01-178 SON	30	ALT	T,C	1	T10N R14W Sec. 10
1-00-328 SON	63	STR	T	1	T10N R14W Sec. 12
1-99-445 SON	70	SEL	T	1	T10N R14W Sec. 4, 5 & 6

1-99-426 SON	35	STR	T	1	T10N R14W Sec. 35
1-99-258 SON	161	CC	T,C	1	T10N R14W Sec. 4, 5, 9 & 10
1-98-336 SON	70	CC	T,C	1	T10N R14W Sec. 5 T11N R14W Sec. 32
1-97-036 SON	174	STR	T,C	1	T10N R14W Sec. 3
Grasshopper Creek WAA					
1-06-157 SON	46	STR,SWS,SEL	T, C	2	T10N R13W Sec. 6 T11N R13W Sec. 31
1-06NTMP-001	628	SEL, GS	T, C	2	T10N R13W Sec. 6, 7 & 8
1-00-147 SON	90	Conversion	T	1	T10N R13W Sec. 7
1-98-236 SON	74	CC	T, FB, C	1	T10N R13W Sec. 3, 9, 10
1-97-070 SON	445	ALT	T	1	T10N R13W Sec. 4 & 5 T11N R13W Sec. 31,32&33
1-97-034 SON	59	STR	T, FB, C	1	T11N R14W Sec. 25, 26
Total	5535				

*Acres within the assessment area – not total plan acres.

As indicated in the table above, approximately 28.8% of the 19,202 acre watershed assessment area has had a timber harvest plan filed on it within the last 10 years. The majority of these past projects have been completed and are currently fully stocked. The more recent plans or those filed within the last 5 years, are considered to have a low to moderate impact on the watershed depending on the amount of time that has past since the completion of timber operations, yarding method utilized and the vegetative cover remaining post harvest.

Additional past activities

Powerline maintenance- Maintenance of the right-of-way dictates that all vegetation which could touch the lines under any conditions be cut, as well as any vegetation which might grow to become a problem in the next decade or so. Biological resources may be affected by these practices.

LWD Removal- Stream clearance activities were initiated by the California Department of Fish and Game within the assessment area in the 1960's. Active removal of the logjams began in the late 1960s and continued into the 1980's. Current views of this activity are less favorable as it may be seen as resulting in a loss of large woody debris (LWD). Watershed resources would have been affected. In stream habitat was adversely affected and impacts continue presently.

Sonoma County Landfill- Sonoma County operates a refuse disposal site transfer station south of the project area. The landfill is located within the Patchett Creek drainage and may contribute to the cumulative effects of the watershed and biological assessment areas.

Future Projects:

As described above, the main activities that have been conducted within the Watershed Assessment Area are wildland burning, agriculture/grazing, rural subdivisions, road building, and timber harvesting. It is anticipated that these activities will continue into the future.

Wildland burning is expected to be conducted in the future, to a certain degree, to control fuel loads and vegetative cover and for site preparation activities. The amount of burning conducted is expected to be minimal and should not result any adverse impacts.

In the past 10 years a small portion of the assessment areas have been developed into vineyards. Development has occurred in areas of gentle terrain (ridgetops), high quality soils, and relatively frost-free environments. A recent proposal has been made by Premier Pacific Vineyards to develop approximately 1,861 acres of vineyard in the area. Approximately 750 of the 1,861 acres fall within the assessment area of this THP and should be considered as a future project. The proposed 1,861 acre vineyard, referred to as the Preservation Ranch Project is part of an integrated land use plan that would establish the following: (1) 1,861 acres of sustainable vineyards; (2) 14,868 acres of Sustainable Timber Management Area; (3) 2,702 acres of core wildlife habitat called Windy Gap Preserve; (4) a 221-acre expansion of the Soda Springs Reserve; (5) a 5-mile public trail easement; and (6) extinguishment of 97 legal parcels via voluntary merger. The integrated land use plan maximizes forest resource protections and environmental benefits while integrating agriculture and wildlife conservation with a large working forest, over the entire landscape. In addition to this future project, the Roessler and Martin projects (THPs 1-04-055 and 1-04-059) are proposing conversion of timberland to vineyard and are being included in one combined EIR and have been considered as future projects.

Large forested land holdings have been and will likely continue to be sub-divided into "ranchettes" and vacation home properties. Rural residential development will continue to have impacts upon the management of large tracts of industrial and small private timberland.

Road building is not expect to result in adverse impacts to the assessment area in the future as a majority of the assessment area is currently roaded and any new roads constructed will utilize proper planning, design and construction techniques.

Industrial timber companies and small landowners own a large majority of this assessment area and have conducted timber management activities in the past. These activities are expected to continue into the future. These future activities will be conducted with the knowledge gained from past practices and will result in fewer adverse impacts and improved forest health and diversity.

Watershed Effects:

Timber harvesting can degrade the beneficial uses of water through increases in **sediment, water temperature, organic debris, chemical contamination** and **peak flows**. Additional discussion of these effects is included in Chapter 3.7 of the project EIR.

Sediment Effects

Runoff from the proposed vineyard site flows to the Gualala River, which is currently on the federal Clean Water Act (CWA) Section 303(d) list due to impairment and/or threat of impairment to water quality by temperature and sediment.

Evaluation of on-site activities:

The project has been designed to avoid initiating soil loss by minimizing the overall extent of bare mineral soil, employing erosion control techniques that focus upon dispersing water rather than concentrating it, directing flows away from at-risk areas and by maintaining an adequate buffer away from watercourses. Elements of the project erosion control plan are likely to minimize risk of sediment delivery. Watershed resources within the plan area are then, expected to be protected from sediment effects by current forest practice regulations, and by the proposed mitigation measures proposed within the THP and EIR including the Erosion Control Plan.

RECEIVED

PART OF PLAN

JUN 10 2009

At first, one must consider the location of the project and whether or not the location presents inherent risk of erosion and whether those risks are high or not. In this instance, the risk is low because the location is at the top of a gentle ridge and because the slopes of the project area average about 12%, with a maximum of approximately 40%. Aside from the basic physiography of the site, the forest practice rules require that structures (roads, skid trails and landings) used during harvesting be fitted with drainage structures to prevent the accumulation of water and its attendant erosive capacity.

Within the project boundaries no unstable areas have been identified nor is there evidence of ancient landslide features apparent. No operations are proposed as part of the proposed project on or near unstable soils, so the likelihood of adversely affecting the slopes is low to nonexistent.

The project proposes no harvesting practices near watercourses. Trees that stabilize streamside banks, since there are no watercourses in the plan area, are not proposed for removal.

Broadcast burning is not proposed as part of the project. Rather, piling and burning of the specifically generated debris is. Therefore, within the areas outside the project boundary, the duff layer and the soil protection that it provides should be maintained. This measure should also reduce impacts from rainfall and overland flow and should maintain filter properties of the surrounding buffer area. Yet the possible mitigation effect comes at the risk of losing the positive benefits to watercourses and the riparian zone that fire could provide, such as nutrient cycling, and natural succession of fire dependent riparian species.

Evaluation of off-site activities:

The Gualala River Total Maximum Daily Load for Sediment (U.S. EPA, 2001), The Gualala River Watershed Assessment Report (North Coast Watershed Assessment Program, 2002) and the KRIS Gualala Project (Klamath Resource Information System, 2003) all describe in detail off-site activities that have contributed to the sedimentation of the watershed.

As required by the CWA, a total maximum daily load (TMDL) assessment for sediment was completed for the Gualala River watershed in late 2002. The information in the TMDL document was developed based on the North Coast Regional Water Quality Control Board (Regional Board) *Gualala River Watershed Technical Support Document for Sediment* (TSD). To date, the Regional Board has not adopted an implementation plan for the prescribed TMDL program.

Although land use practices such as agriculture, grazing, and rural residential development have been implicated as sediment sources in the project area, both the TSD and the TMDL documents identify road construction associated with logging as the primary cause of sediment problems in the Gualala River Watershed. In general, the studies determined that natural sediment sources currently account for approximately one-third of the total sediment delivered to the Gualala River, while two-thirds of the sediment is human-caused. Furthermore, the analysis showed that road-related erosion is the major portion of the human-caused erosion, and that higher road density in a given area results in greater sediment loading from roads.

The Regional Board TSD also addressed the potential for sedimentation due to viticulture. Viticulture was determined to not be a major contributing factor to sediment loads in the Gualala River watershed; however, viticulture and the associated clearing of vegetation are likely to increase surface erosion through exposure of bare earth to rainfall and runoff. Observations made by Regional Water Board staff in conjunction with the TSD development show that conservation

practices used in viticulture (cover cropping, buffer strips, terracing, etc.) have variable effects on erosion prevention.

After identifying the major contributors to sediment water quality impairments in the Gualala River watershed, the TSD and TMDL documents outline proposed load allocations from each major contributing sources that would be necessary to reduce the total loading to meet the loading capacity. Based on the information presented in these documents, the loading capacity estimate is 125 percent of the natural load. This corresponds to a natural load of 380 tons/mi²/yr and an anthropogenic load of 95 tons/mi²/yr when applied to the estimated sediment load. The allocated anthropogenic sediment load (95 tons/mi²/yr) is equivalent to an 88 percent reduction of the current estimated anthropogenic sediment load (810 tons/mi²/yr).

Water Temperature Effects

The following discussion of the importance of water temperature is taken from KRIS Gualala: California chinook salmon, coho salmon, steelhead trout and coastal cutthroat trout are all Pacific salmon species (genus *Oncorhynchus*), and all require cold water. Water temperature tolerance varies somewhat between species and also between life stages. Warm temperatures can reduce fecundity, decrease egg survival, retard growth of fry and smolts, reduce rearing densities, increase susceptibility to disease, decrease the ability of young salmon and trout to compete with other species for food and to avoid predation. Two recent studies conducted in northern California found that coho salmon were at extremely low abundance or absent in streams where the floating weekly average water temperature (MWAT) exceeded 16.8° Celsius (62.3° F) one or more times during the season (Welsh et al., 2001; Hines and Ambrose, 1998). While steelhead are more tolerant of high water temperatures than coho, they too become sub-dominant to warm water species when stream temperatures are elevated (Reeves, 1985). Armor (1990) notes that all salmonids cease growth over 20° C.

According to the Regional Water Quality Control Board (RWQCB) steelhead trout are found in the lower reaches of Patchett Creek commencing about 4,800 feet downstream of the project area. Steelhead trout are not able to migrate above this point as there is an impassable area to further upstream reaches. Water temperature is an important habitat characteristic when considering habitat quality for steelhead trout downstream of the project site. Steelhead trout optimal egg and fry incubation temperatures range from 48°F to 52°F (Moyle, 2002). Optimal temperatures for fry and juvenile rearing range from 45°F to the mid-60s. Thermal stress in juvenile steelhead trout occurs at temperatures exceeding this range, which can promote disease and reduce growth.

Water temperature data analyzed for the NCWAP (2002) indicate that the Gualala River has major water temperature problems for cold water fish species such as steelhead trout. Few tributaries have cooler temperatures where steelhead trout can survive during the summer months. Water temperature data for Patchett Creek was not available for this review although Higgins (2003) states "it is likely that Patchett Creek flow provide potential islands of cool water near their mouths for juvenile steelhead trout in their lower reaches."

Evaluation of on-site activities:

Since harvesting is not proposed along watercourses, shade canopy levels are expected to be maintained and increase over time and thus, solar effect on water temperature is not expected to increase. Solar influences on the watercourses are expected to decrease over time as timber stands grow. Water drafting from fish bearing streams is not proposed, and thus the risk of impacts from this practice is eliminated. No surface water leaves the project area during the summer months. Water flowing from the project area does so via groundwater. However, because the conversion area is far removed from watercourses that flow on the surface during the warm dry season there should be little or no impact on downstream water temperature.

The Erosion Control Plan and the Hydrological Analysis Report prepared for this plan provide detailed discussions of the effects of the proposed operations on water availability, demand and temperatures and provide mitigation measures intended to protect the beneficial uses of the watershed.

Evaluation of off-site activities:

As is the case in the discussion of sedimentation, the Gualala River Watershed Assessment Report (North Coast Watershed Assessment Program, 2002) and the KRIS Gualala Project (Klamath Resource Information System, 2003) describe in detail off-site activities that have effected the water temperature of the watershed.

The KRIS Gualala Project states, "There is a wealth of temperature data available for the Gualala River, thanks to inexpensive automated temperature sensing probes. These devices make it possible to collect hourly data for months with a limited number of site visits. The large amount of regional temperature information is a powerful tool for analyzing salmonid stream conditions. The Forest Science Project (Lewis, 1999) has provided protocols for water temperature data collection. Gualala Redwoods Inc. (GRI) has monitored water temperatures of streams within its holdings with automated temperature sensing devices since 1992. The Gualala River Watershed Council also has collected data in recent years. The KRIS IFR staff received summary data, rather than raw data, from the North Coast Regional Water Quality Control Board (NCRWQCB). Floating weekly average water temperatures exceeded 16.8° C (62.3° F) in mainstem locations of all Gualala sub-basins measured. This indicates that temperature would be limiting to coho salmon production in these streams."

The Gualala River Watershed Assessment Report indicates that the main factors effecting water temperature within the Gualala River are lack of deepwater habitats (pools) and streamside vegetation (canopy cover). These factors are addressed within the Forest Practice Rules as they relate to timber harvesting. The Forest Practice Rules requires a buffer zone along watercourses that protects the streamside vegetation as well as provides for large woody debris recruitment, which aids in the creation of pool habitat.

Organic debris effects:

Organic debris in a watercourse can have either positive or negative effects depending on the size and stability of the material. Large woody debris is an important component of a healthy functioning watershed, while an excessive amount of small fine organic debris will have a negative impact. The Department of Fish and Game (DFG) engaged in stream clearance work for

over 20 years. The amount of large wood which has been removed from the Gualala River by stream clearance projects aimed at fish passage has not been quantified. According to Higgins (1997): "Numerous California Department of Fish and Game stream surveys in the 1960's and 1970's called for clearance of debris jams as well as riparian restoration. A great many stream clearance projects were carried out, while riparian recovery occurred mainly as a result of natural processes. Logjam removal was thought to benefit fish passage and continued until about 1985." LWD provides in stream habitat for salmonid species as well as storage and metering of sediment within the stream itself. A lack of LWD in Class I waters has been identified as a limit on salmonid habitat function.

Evaluation of on-site activities:

A moderate amount of large woody debris is present in watercourse channels adjacent to the plan area from historic logging 30+ years ago and from windfalls and fallen snags. This material is containing sediments, and acting to check potential downcutting of the channel. It shall not be disturbed. There shall be no timber harvesting within the WLPZs adjacent to these watercourses therefore, an increase in the small fine organic debris content of the Class II and III watercourses is not expected to occur. Timber to be harvested within the conversion areas adjacent to WLPZs will be removed from the site or piled for burning well away from WLPZs. Trees to be felled are expected to be directed away from the watercourses, wet areas and their buffer zones. Any logging slash accidentally introduced to those areas during current operations shall be immediately removed. As such, an increase in the existing organic debris content of the watercourses on or adjacent to the plan area will not result from the proposed timber harvesting operation.

The watercourses in the vicinity of the plan area exhibit little evidence of capacity to move large woody debris (LWD) to higher order waters. Stream channels have gentle gradients and do not experience flows sufficient to transport large woody debris. Large woody debris is more prone to serve as a natural bank stabilization mechanism than as future, downstream dependent species habitat. Field evidence within similar watersheds observed by the RPF showed that about 2500 feet of length and 620 feet of vertical fall within the watercourse channel are required to create the necessary head (or force) to move LWD downstream. Field evidence showed that LWD is not, for the most part, being transported within the Class III or Class II waters.

Evaluation of off-site activities:

Although no harvest of trees along any watercourse is proposed within the context of the project, the Forest Practice Rules require a minimum 150 ft. wide Watercourse and Lake Protection Zone around Class I waters (fish streams). The Forest Practice Rules require that along each 330 ft. length of Class I watercourse, at least 10 of the largest diameter trees present that have the capacity to fall into the watercourse be retained permanently. The Rules require that within the first 75 ft. (as measured from the watercourse) of the WLPZ, 85% overstory shade canopy be retained and within the next 75 ft. of the WLPZ 65% overstory canopy be retained. These two requirements translate to a very high level of tree retention along Class I waters, approaching a "no harvest" level.

In addition, the Forest Practice Rules require that the LTO not do either of the following during timber operations:

- (1) Place, discharge, or dispose of or deposit in such a manner as to permit to pass into the waters of the state, any substance 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;
- (2) 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.

Chemical contamination effects:

As noted in Chapter 3.8 of the project EIR, known chemical contaminants have not been identified on the project site, either in association with past agricultural practices, or from other practices typically involving high chemical usage. The project site currently contains the remnants of an apple orchard, which was probably last actively maintained in the 1950s or early 1960s and no chemical treatments have been conducted since that time.

The California Department of Pesticide Regulation (DPR) regulates chemical applications. All applicable laws, regulations and labels shall be adhered to if employed. The regulations are in part designed to reduce the risk of adverse impacts to water bodies. The submitter at this time does not plan to use chemical agents as part of the timber harvest operations.

Evaluation of on-site activities:

Chemical contamination of the watershed will not result from operations proposed in the conversion THP. Fuels and oils are usually stored temporarily and in small quantities at or near landings. Any fuel stored on site will be stored away from all WLPZs in approved storage containers. Used oil from on site equipment will be disposed of in accordance with state laws. There are no plans to use chemicals to remove vegetation from the site as a part of conversion timber harvesting operations. All vegetation proposed for removal under this conversion THP will be removed via mechanical means as outlined in the THP. Due to the use of mechanical treatment of vegetation on the plan area and proper storage and disposal of fuel and oil on the plan area, the proposed timber operations will not result in chemical contamination of the watershed.

As indicated in the Conversion Application, the landowner intends to use integrated pest management (IPM) instead of chemical alternatives in the maintenance of the vineyard. IPM focuses on long-term prevention or suppression of pest problems with minimum impact on human health, the environment or non-target organisms. As a part of the proposed vineyard development and maintenance, chemicals will only be used when a feasible alternative does not exist. In the event that pesticide or herbicide use is deemed necessary during the development and operation of the vineyard, the applicant would strictly adhere to federal, State, and local regulations pertaining to the use of permitted chemicals. Only low-toxicity, high-LD50 materials with minimal biological hazard would be applied, and these materials would be applied at low, safe, and least-cost agronomic rates, according to label direction. The following is a list of potential chemicals and the active ingredient in parenthesis that may be utilized: Abound™ (*Azoxystrobin*), Admire™, Provado™ (*Imidacloprid*), Agri-Mek™ (*Abamectin*), CSC Dusting Sulfur,™ Kumulus,™ Special Electric™ (*Sulfur*), CMR Silicone Surfactant (*Organo-Modified Siloxane*), Dithane (*Mancozeb*), Tripline Foam-Away, Kaligreen (*Potassium hydrogencarbonate*), Latron™ (*Phthalic/glycerol alkyl resin*), Nexter™ (*Pyridazinone*), uintec™ (*Quinoxifen*), Roundup™ (*Potassium salt of Glyphosate*), Serenade™ (*dried Bacillus subtilis*), Sovran™ (*Kresoxim-methyl*), Stylet Oil (*Hydrotreated paraffinnic distillate*), Vanguard™ (*4-Cyclopropyl-6-methyl-2-phenylamino-pyrimidine*). These chemicals are fungicides, herbicides, miticides, and insecticides. The target diseases/pests of these treatments are: Powdery Mildew, Botrytis Bunch Rot, Grape Phylloxera, Spider Mites, Grape leafhopper, Weeds, Pierce's Disease and Sharpshooters. Only personnel with the proper license and/or certification would be permitted to handle potentially hazardous materials, and chemical

applications would take place under the supervision of a qualified vineyard manager. IPM will be used in the development and maintenance of the vineyard in order to minimize chemical use in the vineyard to the extent feasible. A complete discussion of chemical use may be found within Chapter 3.8 of the Environmental Impact Report.

Since most of the roads within or appurtenant to the plan are located away from watercourses, and since the filter strip between roads and watercourses is usually dense, the risk of contamination is minimized should chemical dust abatement methods be employed.

In addition to the use of IMP and adhering to all applicable laws, regulations and labels the following mitigation measure would provide for a proper response to potential chemical spills, which would protect water quality from any accident occurring during the transport or use of agricultural chemicals: *Prior to the issuance of grading permits, the applicant shall provide the Department of Forestry and the Sonoma County Permit and Resource Management Department with an Agricultural Chemical Use and Storage Contingency Plan. The Plan shall include the measures that will be taken in the occasion that a spill occurs. Potential measures include: the deployment of straw wattles or other barriers stored on-site, instructions for diverting any overland flow away from onsite drainages, the on-site storage of absorbent materials to clean up any spills, and a prominent listing of accident and hazard responding agencies, including: the Sonoma County Department of Emergency Services and the Sonoma County Hazardous Materials Response Team. The Plan shall be made available to all workers handling pesticides and shall be posted on the corporation yard building.*

Evaluation of off-site activities:

Use of pesticides on surrounding vineyards, oil and fuel spills, leaking underground tanks including septic tanks, are all potential hazards. However, many of the local vineyards, including the one proposed are organic. In addition, most vineyards and other development are not near watercourses.

Peak Flow Effects

The conversion of forest vegetation and grassland to vineyard potentially could impact downstream beneficial uses by affecting runoff, peak flows and groundwater recharge. Groundwater pumping for irrigation would have an adverse effect on neighboring wells only if an irrigation-type of well were located along the property boundary very close to a neighboring well. The project does not propose to use existing deep wells for irrigation.

The timberland conversion may likely result in an increase in runoff because of surface soil compaction (tractor rows), a less pronounced litter depth (organic matter that covers the surface of soil), and since less evapo-transpiration may occur than under a complete forest canopy. Typically, the net result is a decrease in deep percolation, and a slight, yet measurable per acre increase in runoff. The expected response can fluctuate from year to year based on rainfall. Conversely however, soil tillage practices tend to loosen the soil and thereby the percolation rates of the soil increase so as to offset some of the increased overland flow effect. The amount of runoff captured by the collection system and used for irrigation in the summer, should also offset some of the increased runoff.

Evaluation of on-site activities:

Changes in topography and runoff management in the proposed vineyard are expected to change surface flow paths relative to existing site conditions. Furthermore, removal of forest vegetation is expected to result in increased run-off rates. As a result, increases in winter peak flows could occur. In order to assess the effects of the project on peak flow, and all aspects of the hydrology of the area, a complete hydrological assessment was conducted. Please refer to Chapter 3.7 of the Project EIR and the Erosion Control Plan for further discussion and mitigation measures relating to these issues.

Evaluation of off-site activities:

All development activities that reduce the natural cover contribute to increased runoff and thus may impact peak flows. However, in this rural area the scope of these development activities is too small to have a measurable impact on peak flows.

Watercourse Conditions:

In accordance with Section 303(d) of the Clean Water Act, the State of California periodically identifies waters where water quality standards are not being met. In its latest Section 303(d) list, adopted through Resolution 98-45 on 23 April 1998, the Regional Water Board identified the Gualala River as impaired due to elevated temperature and sedimentation. All of the watercourses within the watershed assessment area are part of the larger Gualala River Watershed.

Considering the impaired nature of the watershed, there have been many studies and surveys conducted that address this situation. These studies/surveys include the following:

- California Regional Water Quality Control Board (CRWQCB). 2001. Gualala River Watershed TMDL Technical Support Document for Sediment. CRWQCB, Region 1. Santa Rosa, CA. 147 pp.
- Higgins, P.T. 1997. Gualala River Watershed Literature Search and Assimilation. Funded by the Coastal Conservancy under contract to Redwood Coast Land Conservancy. Gualala, CA. 59 pp.
- Klamath Resource Information System, 2003. KRIS Gualala Project
- Klamt, Robert R., C. LeDoux-Bloom, J. Clements, M. Fuller, D. Morse, and M. Scruggs (multi-disciplinary team leads). 2002. Gualala River Watershed Assessment Report. North Coast Watershed Assessment Program, 367pp plus Appendices. California Resources Agency, and California Environmental Protection Agency, Sacramento, California.
- U.S. Environmental Protection Agency, 2001. The Gualala River Total Maximum Daily Load for Sediment

The description of the watercourse conditions that follows is taken from the above listed studies as well as on site and off site observations conducted by the RPF who prepared the plan.

STREAM CHANNEL CHARACTERISTICS**Embeddedness and substrate**

Excess fine sediment can cause gravels in the water body to become embedded (i.e., the fine sediment surrounds and packs-in against the gravels), which effectively cements them into the channel bottom. Embeddedness can prevent the spawning salmon from building their redds. Pool tail embeddedness is a simple but subjective means of evaluating salmonid spawning habitat quality in the field. Pools tail crests are measured visually to determine to what degree potential spawning gravels might be embedded (partially buried). The California Department of Fish and Game (1998) rates the level of embeddedness on the percentage that the gravel is embedded. A one rating means that cobbles are embedded 0 to 25%, a two rating 25% to 50%, a three rating 50% to 75% and a four rating 75% to 100%. Cobble embeddedness measured at a one rating is

considered best for steelhead and salmon spawning. The majority of pool tail crests in the watercourses within the assessment area were measured at an embeddedness rating of two (25% to 50%). Embeddedness estimates are visual and involve some subjectivity. The method is somewhat reliable for showing differences in habitat conditions among streams surveyed by the same observers, and much less reliable for strictly classifying habitat conditions or showing differences among streams surveyed by different observers. By contrast, bulk gravel (McNeil) or permeability samples are much more rigorous in describing spawning and incubation habitat conditions.

The Gualala River Watershed Technical Support Document for Sediment provided the following relating to Embeddedness, "A thin to non-existent armor layer (surface layer that is more coarse than the subsurface sediments) underlain and embedded with fine sediment typified observed riffles. The absence of an armor layer is indicative of an oversupply of sediment (Dietrich et al., 1989). Sand is the dominant substrate in many of the observed reaches. Spawning size gravels are overlain and embedded with fine sediment in observed riffles of the North Fork, Rockpile Creek, Wheatfield Fork, and the South Fork while Buckeye Creek was characterized by relatively more embeddedness and fine sediment without an armoring layer. Francini Creek, a tributary to Buckeye Creek, has fine sediment almost completely burying cobble."

The Gualala River Watershed Assessment Report states, "In 1984, roughly 300 of 750 miles of stream channel appeared in a disturbed condition as a result of excess sediment. By 2000, this improved by almost 50 percent with only 156 miles of the channels appearing disturbed. The distribution of the excess sediment within the stream channels is controlled by the location of sediment input and by the effectiveness of the streams to transport the sediment. Higher gradient reaches are more effective in sediment transport. The distribution of the excess sediment observed in 2000 aerial photos was mainly in low gradient reaches. Comparison of the distribution of instream sediment between 1984 and 1999/2000 shows a general watershed-wide reduction in excess instream sediment. This indicates that sediment transport exceeded sediment input over this period and may indicate progressive recovery from past disturbances."

Observation of the watercourses adjacent to the project area revealed that the level of embeddedness was relatively lower in those portions of the streams as compared to those watercourses elsewhere in the assessment area. Overall, the level of embeddedness throughout the assessment area should be considered high. However, as indicated in the Gualala River Watershed Assessment Report the amount of fine sediment seems to be improving and the mitigation measures listed below will ensure that the operation of this plan will not have an adverse impact.

Pools

The KRIS Gualala project contains habitat typing data from stream surveys conducted by California Department of Fish and Game (CDFG) following protocols described in CDFG (1998). CDFG habitat typed approximately 100 miles of Gualala River tributaries in 2001 and that data provides a adequate insight into fish habitat conditions (CA RA, In Review). All surveys in the basin in 2001 were conducted by the same crew.

Larger streams generally have more open canopy and deeper pools than small streams. This is a function, at least in part, of wider stream channels and greater stream energy due to higher

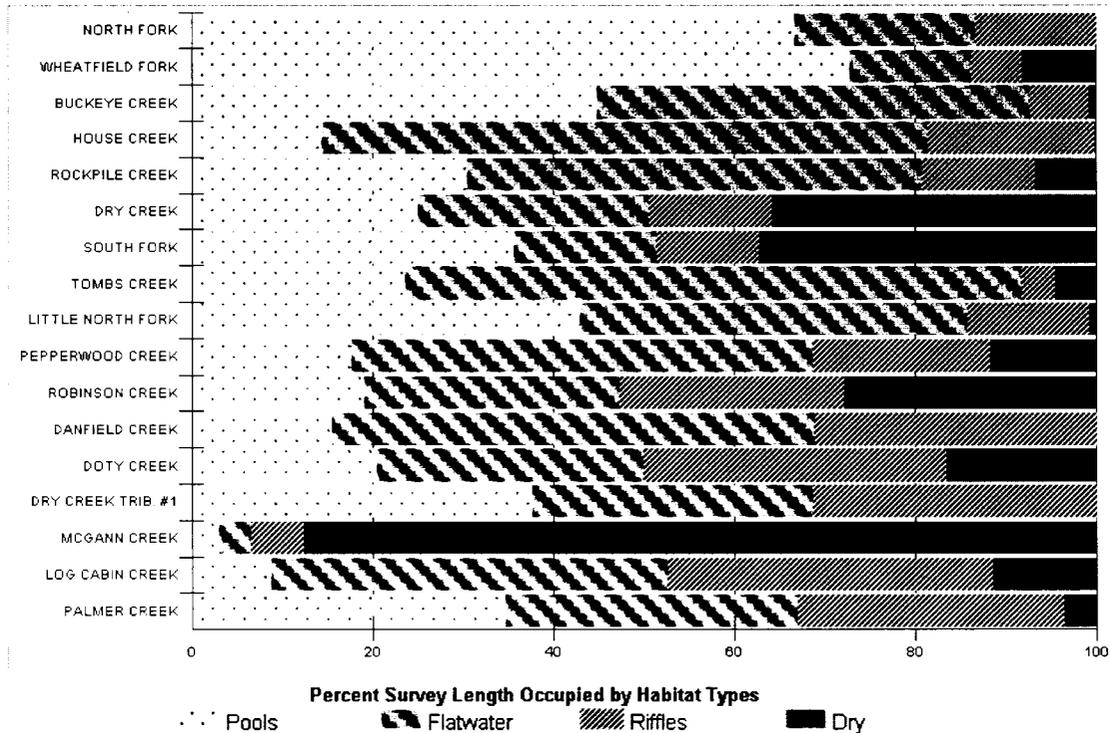
discharge during storms. KRIS charts list streams on the vertical axis in descending order by Strahler stream order to allow some resolution on this size factor. By such a presentation, one would expect a trend in canopy cover and pool depth values. Deviations from the expected trend in canopy or pool depth may indicate streams with more suitable or unsuitable canopy or pool depth conditions relative to other streams of that subbasin. For substantive discussions on analysis of habitat typing data from streams in the Mendocino coast hydrologic unit (Gualala River to Ten Mile River), see (CRWQCB, 2001).

Habitat frequency can be used to roughly gauge problems of cumulative watershed effects on streams. When substantial erosion occurs in a watershed, pool habitats diminish by aggradation (filling in) (Madej, 1984). Subsequent habitat surveys will find the stream dominated by riffles or flatwater units (shallow glides and runs). Flatwater habitats may still be suitable for young of the year steelhead, but young coho salmon require pools, preferably with large wood.

Habitat typing summaries in KRIS combine the 22 total habitat types into four simpler categories: pools, riffles, flat water habitats and dry areas. These are consistent with CDFG level II habitat types. Habitat frequency by length is used instead of percent occurrence because the latter has less relevance to habitat availability and is less sensitive to cumulative effects. For example, streams that are aggraded may still have numerous, shallow pools of short length and a few very long runs and riffles.

The chart below shows the relative length, by basic habitat type, of surveys in the Gualala basin in 2001 by the California Department of Fish and Game. Pool habitat predominates in the higher order streams at the top of the chart, except that House Creek has less than 20% of its habitat occurring as pools. Pool frequency of many lower order streams is low with Doty, Danfield, Robinson and Pepperwood all having values less than 20% by length. Although 2001 was a dry year, extensive dry reaches are consistent with a hypothesis of aggradation in the Gualala basin.

Habitat Types by Percent Length for All Gualala Tributaries 2001



Brown et al. (1994) suggested that pools of one meter (approximately 3 feet) in depth or greater were necessary for successful rearing of coho salmon juveniles. Older age steelhead also rely on pool habitat. Chen (1992) based cumulative effects models for the Elk River, Oregon on whether three-foot-deep pools were being maintained. His hypothesis was that if pools were greater than three feet they would support yearling steelhead.

Maximum pool depth is a discrete attribute with minimally subjective criteria for evaluation in the field. Summary charts in KRIS Gualala display pool depth categories to discern how many pools deeper than three feet exist in surveyed areas. The ranking of streams by size enables the viewer to account for the fact that larger streams naturally have deeper pools due greater flow and energy.

California Department of Fish and Game surveys of the Gualala River in 2001 measured maximum depth for every pool surveyed. Results of the surveys showed that pool depth is restricted. Fifth Order streams like the North Fork and Wheatfield had few pools deeper than four feet. Smaller streams were dominated by pools less than three feet and a high occurrence of pools measuring less than two feet deep.

The predominance of pools less than two feet deep in the Little North Fork, Doty Creek, Dry Creek, and Robinson Creeks (located in upper Robinson Calwater) represents unsuitable rearing habitat for coho and older age steelhead, and is consistent with the hypothesis of aggradation. Despite its large size, the North Fork has many pools less than two feet deep.

The watercourses adjacent to the project area were surveyed by the RPF preparing the plan and pool frequency and depth were measured. These watercourses are located at or near the top of the

watershed and as could be expected, the pools were relatively small when compared to higher order streams. Pools made up approximately 20% of the habitat by length and the average depth was 1-2 feet. Overall, the level of pool filling should be considered high throughout the watershed. However, as indicated in the Gualala River Watershed Assessment Report the amount of fine sediment seems to be improving and the mitigation measures listed below will ensure that the operation of this plan will not have an adverse impact.

Stream Aggradation

As described above, the Gualala River has been identified in accordance with Section 303(d) of the Clean Water Act as impaired due to elevated temperature and sedimentation. As a result of this elevated sedimentation, or as an example of it, stream aggradation is evident throughout the watershed. As described above in the discussion of pools, pool depth and frequency have been reduced as a result of the elevated sedimentation levels and resulting aggradation.

CDFG 2001 habitat surveys found that extensive reaches of the Gualala River and its tributaries lacked surface flow. Many of these reaches formerly supported salmonid juveniles in summer, but high sediment yield has buried these productive reaches. When sediment supply is so high that streams lose surface flow, it diminishes carrying capacity for salmonid juveniles.

Measurement of dry stream reaches is also robust since there is no chance for introduction of observer bias. It is estimated that the Wheatfield Fork of the Gualala River has aggraded approximately 25 feet in recent decades. Both the Wheatfield and upper South Fork Gualala run underground in places during late summer in dry years because of severe aggradation. This condition indicates that stored sediment in low gradient reaches of the mainstem Gualala River remain high, however, there are no studies on the rate of gravel supply from tributaries. It is likely that supply from tributaries such as Fuller Creek is decreasing as indicated by down-cutting of that stream channel (Cox, 1995).

Low to moderate levels of aggradation has occurred within the streams adjacent to the project area. These streams generally have gentle gradients and are therefore more susceptible to aggradation. The streams adjacent to the plan that have higher gradients show less aggradation, as these streams are more capable of flushing the sediment downstream.

Bank cutting/Down cutting

Bank cutting is indicated by areas of fresh, unvegetated soil or alluvium exposed along the stream banks, usually above the low-flow channel and often with a vertical or undercut face. Severe bank cutting is often associated with channels that are down cutting, which can lead to over-steepened banks. As described above, high levels of sedimentation within the watershed has led to or is evidenced by stream aggradation. Also described above, is the fact that more recently, sedimentation levels have been decreasing and the watercourses are now flushing the sediment downstream and are down cutting through the stored sediment.

Within the watershed there are areas where down cutting is evident, however, adjacent to the project area where sedimentation levels and aggradation levels are lower there are very few areas where bank cutting or down cutting is occurring.

Bank mass wasting

The Gualala River watershed is transected by the San Andreas Fault and the Tombs Creek Fault zones along northwest-oriented lines. The latter separates highly unstable mélangé on the east from relatively more stable terrain on the west. The South Fork and the Little North Fork of the Gualala River flow within a linear valley presumably formed by the San Andreas Fault near the coast.

The Gualala River system and surrounding topography evolved in response to rapid geologic changes along the west coast of North America over the past 30 million years, and especially in the last five million years. The drainage networks evolved along with the changing landscape. The drainage network of the Gualala River is bedrock controlled and records the major geologic changes that took place. The landscape continues to change, most notably by mass wasting. Mass wasting and erosion affect fluvial geomorphic conditions, which in turn affect aquatic habitat conditions.

Woodland and grassland areas have the largest proportion of historically active landslides in the watershed, approximately 11,000 acres (6 percent) of the entire Gualala watershed, which is consistent with the underlying geology. These areas are in the finer-grained and less competent melange of the Franciscan Complex that typically fail as large earthflows. Conifer forests generally do not grow well on the mélangé. Approximately 1,100 acres (less than one percent) of the entire watershed are areas of historically active landslides within THP areas between 1991-2000. Approximately 5,500 acres (~3 percent) of the watershed area have historically active landslides within timberlands that are not included in THPs since 1991. With respect to roads, approximately 80 miles or 5 percent of the current roads in the watershed cross areas of mapped historically active landslides. The largest portions of roads that are located in historically active landslides occur in the Wheatfield Subbasin with approximately 37 miles.

The causes of mass wasting are varied. A large percentage of mass wasting is a result of natural geologic processes. Grazing cattle on unstable grasslands and timber harvesting on unstable soils can also result in mass wasting. CDF's studies of the implementation and effectiveness of the Forest Practice Rules indicate that mass wasting failures associated with current timber operations have been mostly related to roads. Roads produced the highest sediment delivery to watercourse channels when compared to other erosion processes (Monitoring Study Group 1999). The majority of the road related mass failures were associated with fill slope problems, indicating that proper road construction techniques are critical for protecting instream resources.

Within the Buckeye Creek watershed mass wasting is associated with the "Kelley Road" which runs the length of Buckeye Creek from its confluence with Flatridge Creek. The road was built in the late 1950's and early '60's. Much of the overburden was simply sidcast into the creek. On steeper slopes there have been numerous bank and fill failures over the years although for the most part the roadbed and slopes have stabilized over time. Nonetheless, as can be seen on aerial photos there are several areas of bare soil from past mass wasting which may still be unraveling.

As it relates specifically to this project, the potential for mass wasting occurring is low. The project area is located along a ridge top with fairly gentle slopes. An erosion control plan has

been prepared that will ensure that measures are taken to prevent erosion, including mass wasting. Operations will not occur on any identified unstable areas.

Scouring

Scouring is described in the Forest Practice Rules as "Stream channels that have been stripped of gravel and finer bed materials by large flow events or debris torrents. Streamside vegetation has often been swept away, and the channel has a raw, eroded appearance." Large flow events are described below under the discussion of flooding. These flood events resulted in the scouring of some small portions of streams within the assessment area, however because of the significant amount of gravel and finer bed materials within the watercourses in the assessment area these materials remained in most areas. Very few channels in the assessment area exhibit a raw, eroded appearance and the level of scouring should be considered low.

Organic Debris

Debris in the watercourse can have either a positive or negative impact depending on the amount and stability of the material. Some stable organic debris present in the watercourse helps to form pools and retard sediment transport and downcutting in small to medium sized streams with relatively steep gradients. Large accumulations of organic debris can block fish passage, block or divert streamflow, or could be released as a debris flow.

Large trees that fall into coastal streams play a dominant role in forming pools, metering sediment, trapping spawning gravels and creating a more complex stream environment. Redwoods are particularly valuable because a large tree may not decay for several hundred years (Kelly et al., 1995). Fir and spruce trees last for several decades while alder and hardwood species rot within a few years of being recruited into the stream (Cedarholm et al., 1997). In general, the larger the size of the woody debris, the greater its stability in the stream channel. Heavier pieces require higher flows for mobilization and longer pieces are more likely to be caught by the stream bank and its vegetation (Spence et al., 1996). Reeves et al. (1993) found "that wood is a primary element influencing habitat diversity and complexity in streams. Consequences of decreased amounts of wood include loss of cover and structural complexity, decreased availability and abundance of habitat units, and reduced varieties of current velocities and other hydraulic features."

As has been noted, there is a lack of pool habitat within many of the watercourses within the assessment area and an increase in the available large woody debris would help to create additional pool structure. The proposed operations will not occur adjacent to watercourses, which will allow for the recruitment of large woody debris.

Please also see the discussion of organic debris above.

Streamside Vegetation

Stream-side vegetation and near-stream vegetation provide shade or cover to the stream, which may have an impact on water temperature, and provides root systems that stabilize streambanks and floodplains and filter sediment from flood flows. Root systems of terrestrial vegetation provide a natural stabilizing factor of streamside banks in addition to providing terrestrial insect drop (i.e. fish food) and nutrients in the form of leaf litter and organic material. Leaf litter, organic material and their associated nutrients are known to be utilized as a food source by benthic

macroinvertebrates, which in turn are a major food source of fish. Terrestrial vegetative bank protection is very substantial in the form of large conifers, hardwoods, sedges, grasses, ferns, and various berries in this watershed.

To some degree, vegetation patterns in the Gualala basin are driven by geology, with grasslands, oak woodlands and mixed oak-fir forests occurring in the eastern part of the watershed, which is underlain by the Central Belt Franciscan formation. The Ohlsen Ranch formation in the upper South Fork and the western Wheatfield also has a similar vegetation type. The Coastal Belt Franciscan formation lies in the west of the watershed and provides the best forest soils.

Surveys conducted by the RPF preparing this plan of watercourses adjacent to the plan area determined that stream side vegetation levels were high. Stream side vegetation consisted of redwood, Douglas fir, tan oak, madrone, manzanita, huckleberry, and sword fern. Canopy cover was determined to average 80%. The stream side vegetation was determined to be providing more than adequate cover and was stabilizing the stream banks. As there will be no operations in these areas the proposed plan will not have an adverse impact on stream side vegetation.

Recent floods

There is no evidence that recent high flow events have had a significant impact on the current watercourse conditions other than contributing to the recovery of habitat by flushing stored sediment through the system. The California Department of Water Resources noted in the Gualala River Watershed Assessment that major, recent high flow events in the Gualala basin besides 1955 and 1964, were 1974, 1986, 1993, 1995 and 1997.

It has been acknowledged that this proposed plan is occurring within a watershed with threatened or impaired values. The mitigation measures stated throughout the plan and specifically those stated in items 18, 21 and 26 of Section II have been incorporated into the plan to address cumulative effects within the Watershed Assessment Area, Biological Assessment Area, and the other assessment areas. With the mitigations proposed in this conversion THP and ECP this project alone or in combination with past, present, or reasonably foreseeable probable future projects will not have a significant cumulative impact on watershed resources.

Mitigations Proposed to Prevent Adverse Impacts to the Watershed Assessment Area:

1. No timber harvesting or timber operations within the WLPZs adjacent to the conversion THP area.
2. Directional felling of timber adjacent to the WLPZs away from the zone to protect the integrity of the zone.
3. The LTO shall not pile dirt and debris within or adjacent to the edge of the WLPZs.
4. Branches and tops of conifers, root wads and hardwoods shall not be piled for burning adjacent to WLPZs.
5. Timberland conversion operations (i.e. non-merchantable vegetation removal and stump removal) shall be immediately followed by initial vineyard development operations. Where this is not possible, skid trails and areas of exposed mineral soil created by commercial timber

harvest operations will be grass seeded and mulched prior to November 15th of the timber operations season.

6. Implementation of the Erosion Control Plan designed by a professional engineer.
7. Implementation of mitigation measures included within the project EIR.
8. Operations between October 15th and November 15th shall cease when 3" of rainfall has been recorded on-site.
9. In addition, the Forest Practice Rules require that the LTO not do either of the following during timber operations:
 - Place, discharge, or dispose of or deposit in such a manner as to permit to pass into the waters of the state, any substance 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;
 - 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.

Application of the best management practices, in conjunction with the mitigations proposed in this THP will ensure that the proposed harvest will not have a significant adverse impact to the watershed assessment area.

2. Soil Productivity:

The assessment area for the impact to soil is the proposed plan area. A skid trail system and road system will access the timber with limited soil disturbance and loss of potential soil productivity. The Erosion Control Plan will include the necessary mitigations for the protection of the soil resource, and will address the drainage of truck roads, sediment control structures, vineyard drainage infrastructure, and a nutrient rich cover crop.

Past Projects

The conversion THP area has a long history of agricultural use by humans. During the late 1800's and early 1900's a portion of the plan area was converted to orchard and grassland for grazing. It is likely that the orchard was operated until the 50's or 60's as remnants of the orchard still exist on the plan area today. Past timber harvesting activity on the plan area was conducted using standard tractor yarding. The California Department of Forestry and Fire Protection does not have any record of timber harvesting on the plan area within the last 20 years. Within the last 20 years it is likely that the property has been used primarily for recreation by the landowner. Portions of the project area were used as a mill site used in conjunction with past harvest activity.

Future Projects

With the exception of the proposed timberland conversion and vineyard development there are no known future projects planned for the Soil Productivity Assessment Area. It is most likely that grape production will be the only future activity conducted on the Soil Productivity

Assessment Area. All portions of the plan submitter's property outside of the project area will be placed in habitat reserves for the protection of exiting resources including soils.

Cumulative soil productivity impacts occur when the effects of two or more activities, from the same or different projects, combine to produce a significant decrease in soil biomass production potential. These impacts most often occur on-site within the project boundary, and the relative severity of productivity losses for a given level of impact generally increases as site quality declines. The primary factors influencing soil productivity that can be affected by timber operations include: **organic matter loss, surface soil loss, soil compaction, and growing space loss.**

Organic Matter Loss

Organic matter loss is expected to result from this conversion THP because merchantable portions of conifer trees will be removed from the site and limbs, tops and hardwoods will be chipped or burned, thus removing the majority of existing standing organic matter from the site. However, leaf material and smaller branches from trees will be left on site and ripped and tilled into the soil within the conversion THP area. In addition, compost material will be brought onto the site and used as an organic matter soil amendment. The installation of erosion control structures, the planting of perennial and annual grasses, and the placement of straw mulching as a temporary cover, will reduce the loss of organic material and aid in the building of a new source of organic matter. Due to the planned addition of soil amendments proposed as a part of the vineyard development operations, it is likely that site soil productivity will likely increase as a result of the proposed viticulture activity.

Surface Soil Loss

A significant loss of surface soil will not result from the proposed timber operation. Some loss of surface soil is unavoidable, however, significant surface soil loss will be minimized due to the fact that the timberland conversion operations (i.e. removal of vegetation and stumps) shall be immediately followed by initial vineyard development operations. Where this is not possible, stumps will not be removed and skid trails and areas of exposed mineral soil resulting from timber harvest operations will be grass seeded and mulched. Virtually all of this soil will be stabilized by the installation of erosion control structures, the planting of perennial and annual grasses, and the placement of straw mulching as a temporary cover. An Erosion Control Plan has been prepared for the proposed Timberland Conversion and Vineyard Development. Please refer to the Erosion Control Plan for a detailed explanation of the Erosion Control measures to be implemented as a part of vineyard development operations.

Soil Compaction

Compaction affects site productivity through loss of large soil pores that transmit air and water in the soil and by restricting root penetration. Compaction effects may be evaluated by considering the soil conditions at the time of harvesting activities and the proportion of the project area subjected to compacting forces.

The Goldridge series comprises a majority of the assessment area and consists of deep and very deep, moderately well drained soils formed in material weathered from weakly consolidated sandstone. During timber operations heavy equipment will utilize existing skid trails, thus limiting the area subjected to compaction. In addition, soil compaction is not expected to be a

significant problem because timber harvesting operations and conversion operations will not be conducted on saturated soils (saturated soil is as defined in the Forest Practice Rules).

Upon completion of timber harvesting operations, a large majority of the area will be exposed to tractor operations, however these tractor operations will be for the purpose of ripping and tilling the soil, thus reducing the existing level of soil compaction on the conversion units.

Growing Space Loss

The entire Timberland Conversion area will result in growing space loss for trees. However the vineyard units are designed to maximize the acreage under permanent vegetative cover. This includes not only the vines but also the annual cover grasses and forbs and mulch. Access roads for farm machinery and other equipment shall be of minimum width and length for vineyard maintenance. The timber will be accessed using the minimum amount of skid trails; this will also help minimize the loss of growing space.

The long term productivity of the soil is not expected to be lost because of the planned erosion control measures and maintenance of the present soil structure through minimal soil displacement. At anytime in the future, the conversion units can be returned to forest crops without a loss in productivity.

Mitigations Proposed to Prevent Adverse Impacts to the Soils Assessment Area:

- Implementation of the Erosion Control Plan designed by a professional engineer.
- No timber operations during the winter period (November 15th – April 1st).
- Timberland conversion operations (i.e. non-merchantable vegetation removal and stump removal shall be immediately followed by initial vineyard development operations. Where this is not possible, skid trails and areas of exposed mineral soil created by commercial timber harvest operations will be grass seeded and mulched prior to November 15th of the timber operations season.
- Timber harvesting operations and conversion operations will not be conducted on saturated soils.
- Soil stabilization by the installation of erosion control structures, the planting of perennial and annual grasses, and the placement of straw mulching as a temporary cover.

As indicated above, the proposed conversion THP will not result in significant organic matter loss, surface soil loss, soil compaction or growing space loss. As such, the proposed conversion timber operation will not have an adverse impact on the soil resource of the assessment area.

3. Biological Resources:

The biological assessment area for this THP is the area within 1.3 miles of the THP, approximately 7,140 acres. A broad array of habitats are encountered across the biological assessment area. This assessment area as described is large enough to account for any effects that may be caused by this THP.

Past Projects:

Past projects within this assessment area are similar to those discussed within the watershed assessment section above. Past timber harvesting has had a role in the condition of the assessment area. The following table includes a summary of these THPs.

Silvicultural Methods:

SEL - Selection

TRN- Transition

SWR - Shelterwood Removal

STSS- Seed Tree Seed Step

REH - Rehabilitation

ALT – Alternative Prescription

STR – Seed Tree Removal

CT- Commercial Thin

CC- Clearcut

VAR – Variable Retention

SS- Sanitation Salvage

GS-Group Selection

Logging Method:

C – Cable

T – Tractor

FB – Feller Buncher

H – Helicopter

Comments:

1- Completed

2- Approved not yet completed

3 - Submitted Not Approved

<u>THP#</u>	<u>Acres</u>	<u>Silvicultural Method</u>	<u>Logging Method</u>	<u>Comments</u>	<u>Location</u>
1-08-124 SON	126	STR, SEL	T	2	T10N R14W Sec. 14
1-08-121 SON	206	VAR	C	3	T10N R14W Sec. 25
1-08-093 SON	112	VAR	T, C	3	T10N R13W Sec. 29 & 30
1-08-078 SON	40	TRN	T, C	3	T10N R14W Sec. 11
1-08-021 SON	128	CC	T	2	T10N R14W Sec. 4, 5, 9 & 10
1-07-028 SON	185	ALT, REH	T, C	2	T10N R14W Sec. 24 T10N R13W Sec. 18 & 19
1-06-192 SON	200	ALT	T,C,H	2	T10N R13W Sec. 20, 28 & 29
1-06-110 SON	135	ALT, REH	T, C	2	T10N R14W Sec. 23,25,26&30
1-06-NTMP-009	160	GS	T, C	2	T10N R13W Sec. 7 T10N R14W Sec. 11&12
1-06-NTMP-001	628	SEL, GS	T, C	2	T10N R13W Sec. 6, 7 & 8
1-04-096 SON	180	TRN, ALT	T	2	T10N R13W Sec. 20 & 21
1-04-059 SON	26	Conversion	T	1	T10N R13W Sec. 12
1-04-055 SON	8	Conversion	T	1	T10N R13W Sec. 12
1-04-045 SON	330	TRN,ALT,REH,VAR,STR	T, C	2	T10N R13W Sec. 18, 19 & 20
1-01-202 SON	12	Conversion	T	1	T10N R13W Sec. 17
1-00-328 SON	70	STR	T	1	T10N R13W Sec. 12
1-00-147 SON	68	Conversion	T	1	T10N R13W Sec. 7
1-00-129 SON	237	STR, ALT, REH	T, FB, C	1	T10N R14W Sec. 13, 24 T10N R13W Sec. 19
1-00NTMP-073	85	SEL	T	2	T10N R14W Sec. 11, 12, 13, 14
1-99-426 SON	35	STR	T	1	T10N R14W Sec. 35
1-99-390 SON	20	SEL	T	1	T10N R14W Sec. 18
1-99NTMP-021	38	SEL	T	2	T10N R14W Sec. 13
Total	3,029				

As indicated in the table above, approximately 42% of the 7,140 acre biological assessment area has had harvest plans filed upon it within the last 10 years.

Future Projects:

Historically, the Biological Assessment Area has been managed for the production of timber products, grazing, agriculture, viticulture and homesite development. Due to the good market for high quality wine grapes that currently exists, it is likely that viticulture will continue to increase as a landuse activity within the Biological Assessment Area. However, it is likely that the market for these wine grapes will eventually become saturated, and vineyard development will stabilize. Based on the historic land use of the area and current market trends it is likely that viticulture, timber production, homesite development (residential uses) and grazing will continue to take place in the future.

Rare, Threatened, Endangered and Special Concern Species:

Species of concern are those identified as known Rare, Threatened or Endangered listed (US & CA) species and Sensitive Species (BOF). The Natural Diversity Data Base (NDDDB) of the California Department of Fish and Game (DFG), California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California, the California Wildlife Habitat Relationships System (WHR) and various wildlife biologists were consulted for occurrences of special plants, animals and natural communities on the biological assessment area. For additional discussion of the botanical and wildlife assessment and surveys conducted please refer to Chapter 3.4 of the project EIR.

The following is a list of Sensitive, Rare, Threatened and Endangered species which have been identified as potentially occurring within the Biological Assessment Area:

Birds

Bald eagle (*Haliaeetus leucocephalus*): (Status: Federal Threatened, California Endangered, CDF Sensitive Species) Uses large, old growth trees or snags, in remote, mixed stands near large bodies of water. Nest of sticks, often uses largest tree in stand, with some shading. Require large bodies of water or free-flowing rivers with suitable snags and other perches. Found in a variety of habitats that have permanent water sources. Nests are built in tall trees, typically 50 to 200 feet above the ground. Large, stoutly-branched trees, snags, or broken-topped trees provide suitable cover. This species will also perch on large rocks. Bald eagles consume a variety of fish, small mammals and water birds. Hunting typically involves swooping onto prey from a perch or from soaring flight. Carrion is also consumed. Nesting typically involves stands with 40% or less canopy. Platform stick nests are built just below tree crown. A variety of tree species are used. Peak breeding activity occurs March through June, although the breeding season extends from February through July. The incubation period is approximately 35 days.

The conversion THP area does not provide habitat for bald eagles. There are no large bodies of water or free flowing rivers on the project area. Bald Eagles are a winter visitor to the northern part of Sonoma County but there are no recent breeding records. Bald eagle habitat can be found along the Wheatfield Fork of the Gualala River. No Bald Eagles were detected during preparation of this plan or during raptor/wildlife surveys. This plan as proposed will not affect Bald Eagle habitat within the Biological Assessment area and thus will not have a significant effect on this species.

Golden Eagle (*Aquila chrysaetos*): (Status: CDF Sensitive Species, California Species of Special Concern) The golden eagle typically inhabits rolling foothills, mountain areas, sage-juniper flats, cliffs, rock outcrops and deserts. Open terrain for hunting is a necessity with such conditions being provided by grasslands, deserts, savannahs and early-successional forests. Cliffs and large trees are required for nesting. Major food sources include lagomorphs (rabbits and hares) and rodents, as well as lesser amounts of mammals, birds, reptiles and carrion. The Golden eagle has also been known to take calves and lambs. Typical hunting methodology consists of high elevation soaring (100 to 300 feet) or low, sweeping gliding. Less common approaches include locating prey from a perch or pirating from other predators. The breeding season is late January through August with peak activity occurring between March and July. Eggs are laid early February to mid-May. The incubation period is approximately 44 days of a 65- to 70-day nesting period. Nests may be abandoned if disturbed by humans during early incubation.

Golden eagles have been observed in this part of Sonoma County, however no known nest sites have been located within the assessment area and no golden eagles were detected during wildlife surveys or general fieldwork. Suitable habitat is available within the plan area and throughout biological assessment area for foraging and limited nesting. The proposed project will not reduce the amount of open terrain available for foraging and there will be portions of the property set aside for the recruitment of large trees suitable for nesting.

Peregrine Falcon (*Falco peregrinus*): (Status: Federal Endangered, California Endangered, CDF Sensitive Species) Uses bodies of water in open areas with cliffs and canyons nearby for cover and nesting. Prey mostly on birds (in flight). Nest is a scrape on depression or ledge in open area. Man-made structures are also used; abandoned raptor nests and tree cavities occasionally used. Typical habitat for the peregrine falcon includes bodies of water in open areas with cliffs and canyons nearby. A variety of vegetative communities that possess the necessary water sources provide suitable habitat for this species. The peregrine breeds near wetlands, lakes, rivers or other water sources on high cliffs banks, dunes and mounds. The breeding season extends from March to late August. The incubation period is approximately 32 days.

No suitable nesting habitat and only limited foraging habitat is located within or adjacent to the project area. The proposed project will therefore have no significant adverse impact to this species.

Northern Spotted Owl (*Strix occidentalis caurina*): (Status: Federal Threatened, CDF Sensitive Species) Uses mature forest with permanent water and suitable nesting trees or snags. Prefer narrow, steep canyons with north-facing slopes. Prey mostly on small mammals. Nests in tree or

snag cavity or broken top of large tree. Abandoned raven or raptor nests are also utilized. It typically inhabits dense, old growth, multi-layered mixed conifer, redwood and Douglas-fir forests in narrow, steep-sided canyons with north-facing slopes. A water source in close proximity to the nest site and roost site are believed to be required. The primary prey of the spotted owl is the woodrat, although flying squirrels, mice, voles and rabbits are also taken. Small birds, bats and arthropods are also consumed. Hunting is usually done by swooping onto prey from a perch or pouncing on prey in vegetation or on the ground. Excess food may be cached. Mature, multi-layered forests are thought to be required for breeding. Breeding occurs from early March through June with peak activity in April and May. A pair may use the same breeding site for 5 to 10 years, although they may not breed every year. The spotted owl is very sensitive to habitat destruction and fragmentation.

The plan area has been surveyed for the Northern Spotted Owl (NSO) every year from 2000-2007. No NSO were detected during any of the surveys. A query of the NSO database revealed two NSO territories within 1.3 miles of the plan boundary. The project as proposed will not reduce the amount of suitable habitat available below those standards described in 14 CCR 919.9. NSO protection measures are described in Section II of the THP under item #32.

Osprey (*Pandion haliaetus*): (Status: CDF Sensitive Species, California Species of Special Concern) Uses large snags and open trees near large bodies of water for feeding, cover and nesting. Nests on a platform of sticks at top of snags. The osprey inhabits wooded habitats that have large bodies of fish-bearing waters and abundant snags and open trees. They are found in ponderosa pine through mixed conifer forests. Suitable water-bodies include rivers, lakes, bays, estuaries and surf zones. Fish is the principle prey of osprey, with lesser amounts of mammals, birds, reptiles, amphibians and invertebrates. Prey is caught from flight, hovering or swooping from perches. Platform-stick nests are built at the top of large snags, dead-topped trees, on cliffs or on human-made platforms. Ospreys have been observed nesting 250 feet above the ground. Nests are typically located within $\frac{1}{3}$ -mile of water, although nests 1 mile from water are occasionally observed. Breeding is initiated around March and continues through September. Colonial nesting in this species is common. Breeding success has increased since the early 1970s.

Osprey have been observed along the coast line approximately 4.5 miles west of the project area and may potentially utilize the Wheatfield Fork of the Gualala River, however no known nest sites are located within the assessment area. No signs of any osprey nest or roost site were located on the project area. The proposed project will have no adverse impact to habitat for this species and thus will not have a significant effect on this species.

Great Blue Heron (*Ardea herodias*): (Status: CDF Sensitive Species) feeds on small fish and frogs in shallow waters, and prefers secluded groves of tall trees near shallow water feeding areas for colonial nesting. The heron is common in shallow estuary systems as well as fresh and saline emergent wetlands and are less common along riverine systems, rocky coastlines, croplands, and mountainous areas. Inhabits shallow estuaries and fresh and saline emergent wetlands near forested habitats. This species will also utilize riverine environments as well as croplands,

pastures, and mountains above foothills. Diet consists of fish, rodents, amphibians, snakes, lizards, insects, crustaceans and occasionally small birds. A majority of the diet--75%--consists of fish. Most fish consumed by herons are species not typically consumed by humans. Hunting involves standing motionless or slowly moving and quickly striking and grasping their prey. Nesting usually occurs in groups (rookeries) in the tops of tall trees or snags. The tallest trees are usually the preferred nesting sites. Heron rarely nest elsewhere than in their preferred habitat. Rookeries should be protected from human disturbance as nest abandonment is a typical result of disturbance. As a rule, herons are most active around dawn and dusk. Eggs are laid in late-February and March. The incubation period lasts about 28 days. Young herons are capable of flight by 7 weeks of age, but may remain at the nest until week 11.

Habitat for the great blue heron does not exist on the conversion THP area. Some habitat could exist within the assessment area adjacent to the Wheatfield Fork of the Gualala, however no sightings have been recorded in the area to date. As there is no habitat within the proposed project area and no herons have been detected within the assessment area, the conversion THP as proposed will not likely have a negative affect on the Great Blue Heron.

Great egret (*Casmerodius albus*): (Status: CDF Sensitive Species) Requires groves of trees suitable for nesting and roosting, relatively isolated from human activities, near aquatic foraging areas. Prey on small fish, aquatic insects, crabs, frogs, etc. Prefer to forage in shallow, relatively still waters of estuaries, lakes, slow moving watercourses, salt ponds, or mud flats. Colonial nesters that build groups of platform nests in large trees or snags, usually near a feeding area. Great egrets are highly dependent upon wetland habitats and riparian areas. The great egret requires forested areas for nesting and roosting and aquatic habitat for foraging. Night roosting and nesting occurs in trees; day roosting occurs in feeding habitat. Typical feeding habitats include fresh and saline emergent wetlands, the edges of estuaries, lakes and slow-moving rivers, mudflats and salt ponds and irrigated croplands and pastures. The egret's diet consists of small mammals, fish, crustaceans, insects, amphibians, snakes, and snails. The method of hunting is similar to the great blue heron--standing motionless or stalking slowly then rapidly striking their prey is customary. Nesting typically occurs away from human disturbance. March through July is the primary nesting period. Nests are built of sticks and stems of marsh plants in tall trees. The incubation period is approximately 26 days. The young are thought to fly after 5 to 6 weeks. Egret and great blue heron often nest together. Egrets are susceptible to human disturbance during nesting and nest abandonment is often the result of human activity in nesting areas.

Habitat for the great egret does not exist within the conversion THP area. Some habitat may exist within Biological Assessment Area, but no sightings have been recorded in the area. No roosting or nesting sites were located within the project area. The THP as proposed will not affect the habitat for the Great Egret.

Northern Goshawk (*Accipiter gentilis*) (Status: Board of Forestry Sensitive Species and Department of Fish and Game Species of Special Concern.) This species is listed as a yearlong resident in the northern half of Mendocino County and while the typically used habitat extends into Sonoma County, there are no records of any nesting pair in Sonoma County. WHR states that this species uses larger diameter conifer and deciduous stands for cover and nests in the most dense parts of the stand. While hunting, snags and dead-topped trees are often used for

observation and prey-plucking perches. Habitat suitable for this species is present within the watershed. The NDDDB query noted one report of a northern goshawk on the Ormbaun Valley quadrangle in the Mailliard State Reserve 15 miles northeast of the Biological Assessment Area.

No Goshawks were detected on the plan area during wildlife surveys or general fieldwork. No sign of this species was located on the plan area. The project area is mainly composed of a dense stand of small diameter, young growth trees not typical of goshawk habitat. The operation of this plan will have no adverse impact on this species. A conservation easement has been proposed in conjunction with this plan setting aside portions of the property that could eventually develop into suitable habitat.

Northern Harrier (*Circus cyaneus*): (Status: Department of Fish and Game Species of Special Concern) Found in flat, or hummocky, open areas of tall, dense grasses and moist or dry shrubs and marsh habitat. It frequents meadows, grasslands, open rangelands, desert sinks and fresh and salt water emergent wetlands. It does not commonly occur in wooded areas. Prey mostly voles, other small mammals, birds, frogs, etc. Hunts from low perches or by flying close to the ground. They seldom soar except to migrate or during courtship display. Nests on ground in shrubby vegetation, usually at marsh edge. The harrier breeds April to September with peak activity in June and July. The nesting period lasts about 53 days. Clutch-size average 5 eggs. The California population has declined in recent years as a result of wetland drainage, grassland conversion to agriculture and burning and plowing of nesting areas during critical stages of breeding.

Habitat for the northern harrier is located on and adjacent to the conversion THP area and it is probable that this species utilizes grassland areas throughout the assessment area. The conversion of existing fields to vineyards as proposed will result in a reduction of northern harrier breeding habitat. The area of grassland proposed for conversion is relatively small (approximately 15 acres) and suitable habitat for the northern harrier exists throughout the Biological Assessment Area, therefore the proposed operations will not result in a significant reduction in this habitat. In addition, the conservation area proposed as a part of this plan contains suitable habitat that will remain protected. As such, the proposed conversion THP will not have a significant adverse affect on northern harriers.

Sharp-shinned hawk (*Accipiter striatus*):

Forested habitats with openings in close proximity are the preferred nesting and cover environment. Dense, even-aged, single-layered stands of timber provide the ideal nesting habitat. A water source is usually within 300 feet of the nest. Birds are the primary prey of the sharp-shinned hawk, mostly birds smaller than jays. Small mammals, reptiles, insects and amphibians are also consumed. Hunting consists of sudden flight from perch sites, although the low, sweeping flight of the harrier is also utilized. Openings at the edges of woodlands, hedgerows, brushy pastures and shorelines are preferred hunting habitats. Nests are usually built in dense, pole and small-tree stands of conifers that are cool, moist and well shaded. Nests are typically built in dense foliage against the trunk or in the crotch of a large branch. The sharp-shinned hawk nest is the most inconspicuous of all *Accipiter* nests. The breeding period is April through August with peak activity in late May and June. The incubation period is approximately 34 days with the young fledged at 60 days. This species is an important predator of small birds. It is the

RECEIVED

PART OF PLAN

JUN 10 2009

least common breeding *Accipiter* in California and is a rare breeder in Sonoma County.

The sharp-shinned hawk could potentially utilize the habitat within and surrounding the project area, however no sharp-shinned hawks were detected during plan preparation or during wildlife surveys. The preferred habitat of this species (densly forested habitats with openings in close proximity) will remain on the property following operations, therefore the proposed project is not expected have an adverse impact on this species.

Cooper's Hawk (*Accipiter cooperii*): Preferred habitat consists of wooded areas that occur in patches within close proximity to water. Dense stands with moderate crown depths are utilized for nesting. Nesting usually occurs in second-growth conifer stands near streams. Hunting consists of explosive flights from perches or harrier-style low, gliding flight, using trees and terrain for concealment. Feed mostly on small birds, mammals, reptiles and amphibians. Cover is utilized to approach and attack prey. Breeding occurs March through August with peak activity in May, June and July. Incubation lasts between 35 and 65 days. Annual fledging success is (about) 2 young per pair. Widely distributed breeding species. Nests in live trees with good cover on a stick platform nest, lined with bark.

Cooper's hawks are a relatively common bird of prey in most parts of the west and have been observed on the plan area and within the Biological Assessment Area. While Cooper's hawks have been observed in the vicinity of the plan area, no nest sites have been detected on the plan area or within the assessment area. The preferred habitat of this species (wooded areas that occur in patches within close proximity to water) will remain on the property following operations, therefore the proposed project is not expected have an adverse impact to this species.

Red-shouldered Hawk (*Buteo lineatus*): Red-shouldered hawk is protected under the Migratory Bird Treaty Act (50 CFR 10.13) and under California Fish and Game Code Sections 3503, 3503.5, 3800, and 3513, which protect nesting raptors and their eggs/young. This medium-sized raptor prefers the largest trees in a particular area for nest construction. Blue gum eucalyptus (*Eucalyptus globulus*) trees have become favorite nesting trees for this species in California. A stick nest is constructed and usually two to four eggs are laid in the spring. Incubation lasts about 27 days. Usually two or three nests are built over a several year period by a nesting pair and then are reused year after year. Prey consists of reptiles and small rodents. The project site provides suitable nesting habitat for red shouldered hawk. Mitigation measures to protect this species as well as all wildlife species have been detailed below and under Item 32 in Section II of the THP.

Red-tailed Hawk (*Buteo jamaicensis*): The red-tailed hawk is protected under the Migratory Bird Treaty Act (50 CFR 10.13) and under California Fish and Game Code §3503.5, 3800, and 3513, which protect nesting raptors and their eggs/young. This raptor species has an extremely wide tolerance for habitat variation, which can be attributed to its very broad spectrum of prey (Johnsgard 1990). Some clear habitat preferences do exist, however, and have been analyzed by a variety of studies. Habitat preferences in the winter for both sexes are oriented toward upland pasture, grassland, and hardwood habitats, with females also using lowland hardwoods and males using marsh-shrub communities. In the spring, females continue to use mainly upland and lowland hardwoods, probably as a reflection of their orientation toward a nest site. Monk & Associates observed red-tailed hawks foraging over the project site on multiple occasions.

RECEIVED

JUN 10 2009

PART OF PLAN

Furthermore, the project site provides suitable nesting habitat for red-tailed hawk. Mitigation measures to protect this species as well as all wildlife species have been detailed below and under Item 32 in Section II of the THP.

Merlin (*Falco columbarius*): (Status: California Species of Special Concern) The merlin is an uncommon winter resident of coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, edges and early successional stages; rarely makes use of heavily wooded areas or open deserts. The primary food source of the merlin is small birds, although small mammals and insects are also exploited. Hunting consists of low-flying searches with short dashes or dives. Prey is captured in the air or on the ground. The merlin does not breed in California.

The merlin could potentially be a sporadic winter visitor to the project area, however no merlins were detected during wildlife surveys or plan preparation. As with the sharp-shinned and Cooper's hawks, the preferred habitat of the merlin (open areas adjacent to woodlands) will remain following operations, therefore the proposed project is not expected have an adverse impact to this species.

Prairie falcon (*Falco mexicanus*): (Status: California Species of Special Concern) The Prairie falcon feeds on small mammals, birds, and reptiles. Requires cliff ledges for cover, and usually nests within ¼ mile of water. Prairie Falcons are known to inhabit open mountains, dry plains and prairies. These falcons require cliffs and rock promontories and earthen mounds for nesting. Prairie falcon numbers are declining due to rodent-poisoning programs and nest-robbing by falconers. These falcons occur in northwestern California during winter only and are entirely absent during the summer.

Prairie Falcons were not observed on or in the vicinity of the plan area during plan preparation or the raptor survey. No records show prairie falcons utilizing habitat within the assessment area. The proposed conversion THP will not have a significant adverse impact on Prairie Falcons.

White-tailed Kite (*Elanus leucurus*): (Status California Species of Special Concern) Uses herbaceous lowlands with variable tree growth and dense population of voles. Prey mostly voles, and other small diurnal mammals. Preferred nest locations are in dense oaks, willows or other tree stands. Makes nest of loosely piled sticks and twigs lined with grass, straw or roots, placed near top of dense oak, willow or other tree stand, near open foraging area. Inhabits low rolling foothills and valley margins with scattered oaks and river bottomlands or marshes adjacent to deciduous woodland. Cover is sought in dense canopies of various woody species. Requires open grasslands, meadows or marshes for foraging that are close to dense-topped trees for nesting and perching. The white-tailed kite is rarely encountered far from agricultural environments. Foraging occurs in undisturbed, open grasslands, meadows, farmlands and emergent wetlands. Voles and other small diurnal mammals constitute the primary diet; birds, reptiles, amphibians and insects are also taken. White-tailed kites hunt by soaring, gliding and hovering under 100 feet above the ground and then slowly descending on their prey. The breeding period is from February through October, with peak activity from May to August. The incubation period is approximately 28 days. Young fledge in 35 to 40 days.

Agricultural areas and grasslands surround the project area, providing favorable foraging habitat, however, no known kite nest sites are located within the assessment area. White-tailed kites have been observed foraging within the grassland portions of the project area and adjacent fields within the assessment area. As kites feed upon rodents that may be harmful to agricultural crops, an effort to provide habitat will be made by retaining the preferred nesting habitat of this species (dense oaks, willows or other tree stands located near open foraging grounds) on the property.

Marbled murrelet (*Brachyramphus marmoratus*): (Status: Federal Threatened, California Endangered, CDF sensitive species) require mature coastal coniferous forests for nesting and nearby coastal waters for feeding. In the summer the marbled murrelet feeds close to shore over shallow waters. It usually nests in old growth Coniferous Forest near the Pacific coast. The marbled murrelet is a secretive species that is still not well understood. Foraging is done in the ocean while nesting occurs in old-growth forests up to 40 miles from the coast. Nests are shallow depressions in moss and organic debris built on branches of large branches, often 100 feet or more above the ground. Summer foraging occurs close to shore (within $\frac{1}{3}$ -mile) in waters usually less than 95 feet deep. During nonbreeding seasons offshore foraging extends beyond $\frac{1}{3}$ -mile. The main prey is small fish that is pursued by diving birds. Sand lance is a favored prey; sea perch and fish from the families Osmeridae, Scorpaenidae, and Stichaeidae are consumed in lesser amounts. Nests appear to be located along major river systems. It is surmised that fledgling young are floated down the river to the ocean. Parents feed nestlings small fish. Breeding information is based on limited data. Eggs are laid from mid-May to mid-June. The incubation period is from mid-June to mid-August and last 30 days. Young are fledged from early July through early September. Both parents cooperate in incubating the eggs.

The plan area does not contain suitable habitat for marbled murrelets. There may be some marbled murrelet habitat within the Biological Assessment area although no marbled murrelets have been reported. The proposed conversion THP will not have an adverse impact on marbled murrelets as there is no suitable habitat on the conversion THP area. The portions of the property being set aside in a conservation easement for the benefit of wildlife species may eventually develop into suitable habitat for this species.

Western screech owl (*Otus kennicottii*) is protected under California Fish and Game Code Sections 3503, 3503.5, 3800, which protect nesting raptors, their eggs, and young. The owl is also protected under the Federal Migratory Bird Treaty Act (50 CFR 10.13). The western screech owl is fairly common in areas of oak woodland and in mixed oak and Douglas-fir forests. In Sonoma County the owl is fairly common in inland forests. The Sonoma County Breeding Bird Atlas has a "probable" nesting location for this owl along Annapolis Road. During nocturnal calling surveys for spotted owl on the project site, Monk & Associates heard western screech owls calling on multiple occasions. The distance of the calling owls could not be determined; therefore, the biologists were unable to determine if the owls calling were present on the project site or on adjacent lands. Regardless, because the project site's forest provides suitable nesting habitat for this owl species, the owl's presence onsite cannot be dismissed. Mitigation measures to protect this species as well as all wildlife species have been detailed below and under Item 32 in Section II of the THP.

Yellow Warbler (*Dendroica petechia*): (Status: California species of special concern) The yellow warbler is an uncommon to common migrant in northern California. It frequents open to medium-density woodlands and forests with a heavy brush understory (during the breeding period). During migration, a multitude of habitats are utilized, including sparse to dense woodlands and forests. Habitat most conducive to the yellow warbler during the breeding season is found in deciduous riparian areas with cottonwoods, alder, willow and other miscellaneous small trees and shrubs. Nests consist of an open cup placed approximately 2 to 16 feet above the ground in a deciduous sapling or shrub. Tall trees adjacent to the nest are used for singing and foraging. The breeding period is from mid-April into early August with peak activity occurring in June. The incubation period is 11 days with the young being fledged between days 9-12. Brood parasitism by brown-headed cowbirds plays a significant role in yellow warbler population declines.

Yellow warblers have been observed on the project site. Habitat for the yellow warbler is present on the conversion THP area and throughout the Biological Assessment Area. Habitat most conducive to the yellow warbler during the breeding season (deciduous riparian areas with cottonwoods, alder, willow and other miscellaneous small trees and shrubs) will be retained within the WLPZ and conservation areas. Mitigation measures to protect this species as well as all wildlife species have been detailed below and under Item 32 in Section II of the THP.

Mammals

Red Tree Vole (*Phenacomys longicaudus*) is listed by the California Department of Fish and Game as a California Species of Special Concern. Distributed along the North Coast from Sonoma Co. to Oregon border, more or less restricted to fog belt. Rare to uncommon throughout its range, but difficulty of locating nests and capturing individuals makes abundance hard to assess. Occurs in mature Douglas-fir, redwood, and Montane hardwood-conifer habitats in fog belt. Specializes on needles of Douglas-fir and grand fir. Needles and twigs gathered at night may be consumed, or brought to nest. Needle resin ducts are removed; remaining part is eaten, and resin ducts may be used to line nest cup. Males mostly in fir needle tree nest, or less often, in shallow burrows at base of tree, beneath litter. Females spend most of their lives in trees, constructing large, domed nursery nests of Douglas-fir needles, from 6-150 ft above ground. Medium to large nests are generally females, and small nests more likely males. Nests may be occupied by succeeding generations, increasing in size. Nests of Douglas-fir needles are constructed in trees, preferably tall trees. Nest may be situated on whorl of limbs against trunk, or at outer limits of branches. In young second-growth Douglas-fir, the broken tops of trees frequently are used. Nest site varies from 18in in length, breadth and height, to 3 ft in diameter, and 2-3 ft in height. Older nursery nests may encircle entire tree. Drinking water required. Water probably obtained from food, but individuals lick dew and rain off needles near nests. Yearlong activity. Nocturnal outside nest, but feeds in day on stored needles. Home range probably one to several fir trees, with females often living in one tree and males visiting several trees. Spotted owl is main predator of red tree voles throughout the geographical distribution, but saw-whet owls, and perhaps raccoons, are predators. Steller's jays may be the most important predators of tree mice. Severe winter storms probably affect local populations adversely.

The closest known record for the red tree vole is located approximately 4.0 miles southeast of the project site, near the Wheatfield Fork of the Gualala River. One tree vole nest was observed near the Wheatfield Fork in 1997. The conversion THP area does not contain mature stands of Douglas-fir or mixed conifer. No nests or signs (resin duct deposits) of red tree voles have been seen in the area. No significant impacts to this species are expected to occur from implementation of the proposed project.

Pacific Fisher (*Martes pennanti pacifica*) is listed by the California Department of Fish and Game as a California Species of Special Concern and a candidate for listing as threatened or endangered. The Fisher is known to inhabit intermediate to large-tree stages of coniferous forests and deciduous-riparian habitats with a high percent canopy closure. Suitable habitat for fishers consists of large areas of mature, dense forest stands with snags and greater than 50% canopy closure. WHR maps indicate that fisher are not currently known to inhabit Sonoma County, however historical records indicate that the fishers range may have extended as far south as Marin County in the Coastal Range.

Habitat for fisher does not exist within the conversion THP area and the Biological Assessment Area contains only scattered small pockets of suitable habitat for fisher. The proposed conservation easement area will retain habitat elements such as large trees, snags and downed woody debris. As such, the proposed conversion THP will not result in a significant adverse impact to fisher habitat within the Biological Assessment Area.

Humboldt marten (*Martes americana humboldtensis*)

The Humboldt marten is listed by the California Department of Fish and Game as a California Species of Special Concern and is endemic to coastal forests of northwestern California with a historical range described as "narrow northwest humid coast strip, chiefly within the redwood belt" from the Oregon border to northern Sonoma County (Slauson 2003). Martens require a variety of different-aged stands, particularly old-growth conifers and snags, which provide abundant cavities for denning and nesting. Tend to travel along ridgetops, and rarely move across large areas devoid of canopy cover. Small clearings, meadows, and riparian areas provide foraging habitats, particularly during snow-free periods.

Marten, or sign of marten have not been observed on the plan area or within the BAA. The plan area does not contain old-growth or late seral forest. The extensive rural residential use in the immediate vicinity of the plan area including roaming domestic dogs would discourage use of the site by marten, therefore the proposed THP will not result in a significant adverse impact to marten within the Biological Assessment Area.

Amphibians

Red-Legged Frog (Northern and California Red-Legged Frog)

Northern red-legged frog (*Rana aurora*) is a California "species of special concern." This northern red-legged frog has no Federal status. Species of special concern are closely monitored for trends in population numbers because, in most cases, their California breeding populations are seriously declining and extirpation from all or a portion of their range is possible. This title affords no legally mandated protection for this species; however, pursuant to the California Environmental Quality Act (CEQA) (14 CCR §15380), this title shall be presumed to indicate the species is rare for purposes of CEQA. Thus, northern red-legged frog should be considered in any project that will, or is currently, undergoing CEQA review, and/or that must obtain an environmental permit(s) from a public agency.

The California red-legged frog (CRLF) (*Rana draytonii*) was federally listed as threatened on May 23, 1996 and as such is protected pursuant to the Federal Endangered Species Act. Critical habitat for this species was designated by USFWS on March 13, 2001 (Federal Register 66: 14625-14674); however on November 6, 2002 a court decision removed many of the critical habitat units that had been designated for the frog on March 13, 2001. On April 13, 2004 the USFWS re-proposed critical habitat for CRLF which was adopted on April 13, 2006. In September 2008, the USFWS again re-proposed critical habitat for the California red-legged frog (USFWS 2008). Closest mapped critical habitat or proposed critical habitat occurs in southern Sonoma County and in south-central Mendocino County. No critical habitat or proposed critical habitat is mapped any closer than approximately 28 miles (straight-line) from the project site. Unit MEN-1 is recently re-proposed critical habitat that is approximately 28 miles north of the project site. Units MRN 1, 2, and 3 are critical habitats that at the closest point to the project site are approximately 34 miles to the south. Critical habitat Units SON 1, 2, and 3 at their closest point to the project site are approximately 45 miles to the southeast. The closest record for the California red-legged frog to the project site

is approximately 9.7 miles northwest of the project site (CNDDDB Occurrence No. 967). The record location is for a pond in a Bishop pine (*Pinus muricata*) forest north of the Gualala River. The California red-legged frog is also a state "species of special concern." This title affords no legally mandated protection for this species; however, pursuant to CEQA (14 CCR §15380), any project related impacts to this species would be regarded as significant.

Until California red-legged frog critical habitat was proposed for revision by USFWS in September 2008 (op. cit.) the project site heretofore had been regarded as within the range of the northern red-legged frog. The California red-legged frog was typically regarded as occurring from Sonoma County in northern California south to northern Baja California, and inland through the northern Sacramento Valley into the foothills of the Sierra Nevada Mountains, south to Tulare County, and possibly Kern County. The northernmost extent of its confirmed range was the Russian River. In contrast the northern red-legged frog is regarded as occurring from Vancouver Island, British Columbia, Canada, south along the Pacific coast west of the Cascade ranges to northern California (northern Del Norte County). Formerly, red-legged frogs found from southern Del Norte to northern Marin County (the project site lies within this range) were believed to exhibit intergrade characteristics of both *the northern and California red-legged frog* (USFWS 1996). Relatively recently Schaeffer et al., as reported in the recently published Proposed Rule that re-proposes critical habitat of the California red-legged frog (USFWS 2008), that data obtained from a 2004 genetics study determined that *R. aurora* actually consists of two species, the northern red-legged frog and the California red-legged frog. In addition, it was reported that the ranges of these two frogs overlap only in a narrow zone in Mendocino County. Owing to the populations of California red-legged frog found in Mendocino County there is now evidence that the range of the California red-legged frog extends northward from its traditionally recognized coastal habitats in Marin and Sonoma Counties to Mendocino County.

Even though Monk & Associates did not regard the project site as suitable for occupation by red-legged frogs, Monk & Associates biologists conducted two diurnal and two nocturnal surveys in all aquatic habitats on the project site. This level of survey meets the standards of care required by the CEQA to address potential impacts to red-legged frogs. The surveys were conducted at a time when egg masses, if present, would have been detected. Had egg masses been present, they would have been easy to detect owing to the crystal clear and shallow water found on the project site. No red-legged frog egg masses, larvae, morphs, or adults were detected during formal surveys or during any other survey of the tributaries on the project site. Consequently, Monk & Associates concludes that red-legged frogs do not occur on the project site and that the proposed project will not impact the Northern or California red-legged frog in any way. Regardless, with the new information about overlap in range between the Northern red-legged frog and the California red-legged frog, and because there are tributary freshwater habitats on the site, these habitat are regarded as "suitable" for the red-legged frog, which does not infer presence only that aquatic conditions are present that potentially could support red-legged frogs.

Monk & Associates believes that a formal study (protocol-level survey) will be necessary to dismiss the potential presence of the California red-legged frog on the project site. The proposed Timber Harvest Plan and Vineyard Conversion project could result in impacts to upland habitat that provides potential dispersal habitat for California red-legged frogs. No suitable breeding habitat occurs on the project site and thus no impacts are expected to occur to red-legged frog breeding habitat. Because of the presence of suitable dispersal and aquatic habitats, impacts to the California red-legged frog are regarded as a potentially significant adverse impact. This impact could be mitigated to a level considered less than significant. Mitigation measures to offset these impacts are discussed under Item 32 in Section II.

Foothill Yellow-legged frog (*Rana boylei*) (Status: California Species of Special Concern) Inhabits small permanent streams with rocky substrates. Uses permanent pools of streams, ponds, and marshes with extensive shoreline vegetative cover. These habitats include valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral and wet meadow. Feed on aquatic and terrestrial insects and invertebrates, as well as fish, tadpoles, and smaller frogs. Insects are the primary food source of adult frogs, especially adult insects. Both aquatic and terrestrial insects are consumed. Tadpoles graze on algae and diatoms. This species of ranid is rarely found far from permanent water, even on rainy nights. Tadpoles require water for three to four months during maturation. Home range is limited to about 33 feet, in the farthest direction. Breeding and egg laying usually commences at the end of spring flooding--typically between mid-March and May. Eggs are deposited in permanent pools attached to emergent vegetation. Egg clusters average 200-300 individuals. Tadpoles hatch in about 5 days. Tadpoles transform in three to four months. Garter snakes, fish and bullfrogs are the primary predators of this frog.

Yellow-legged frogs have been detected within the watercourses adjacent to the plan area. Habitat for yellow-legged frogs does not exist on the conversion THP area as all watercourses have been excluded and provided with no operation buffer zones. The watercourse protection measures stated in the plan are sufficient to protect the habitat for this species.

Tailed frog (*Ascaphus truei*): (Status: Federal Species of Concern and a California Species of Special Concern) This species is restricted to perennial montane streams in steep-walled valleys with dense vegetation. Permanent water is critical and individuals are rarely found more than 40 ft from streams. Although considered uncommon, experienced observation reveals abundant populations in suitable habitat. Preferred habitat includes montane hardwood-conifer, redwood, Douglas-fir and ponderosa pine forests with perennial streams in steep-walled, densely-vegetated valleys. Adult frogs consume a wide array of prey, taken along stream banks and in the water. Aquatic and terrestrial insects (larval and adult), spiders and snails are all consumed. Tadpoles derive their energy by grazing diatoms on submerged rocks; small quantities of filamentous algae are also consumed. Conifer pollen is consumed in large quantities when available. Cover is sought under submerged rocks and logs in the stream, or under similar objects close to the stream. Tadpoles require cool stream temperatures (15^oC or less). Tadpoles require rocks around 2½ inches in diameter to which they attach themselves via a large oral sucker; turbulent water is preferred to smooth, swiftly flowing water. The breeding period typically occurs in the early fall with the eggs being laid during the following summer. Eggs hatch in about 1 month with aquatic larvae requiring 2 to 3 years to fully transform. Metamorphosis usually takes place in the fall.

There are no known tailed frogs within the assessment area. The watercourse protection measures stated in the plan are sufficient to protect the habitat for this species.

Reptiles

Northwestern pond turtle (*Clemmys marmorata marmorata*) (Status: California and Federal Species of Special Concern) The northwestern pond turtle requires ponds, lakes, or permanent pools in streams with basking sites such as partially submerged logs, rocks, or mud banks. Normally associated with permanent or nearly permanent water in a wide variety of habitat types below 6,000 ft in elevation. Omnivorous, feed on aquatic plant material, aquatic invertebrates, fish and frogs. Eggs deposited in soil with relatively high humidity. Nesting sites typically have compact soil, with significant amounts of clay or silt. Nests are generally located on south, southwest or southeast facing exposures, with slope of 25 degrees or less. Surrounding vegetation tends to be short grasses or forbs. Nesting may occur adjacent to or in openings of forest habitat. The northwestern pond turtle inhabits a variety of habitats that contain permanent or nearly permanent water below 6,000 feet. Permanent ponds, streams, rivers, lakes and irrigation ditches provide suitable habitat. This turtle is omnivorous, feeding on aquatic plant material (pond lilies), aquatic insects, a variety of aquatic invertebrates, frogs and fish. Individuals have been known to consume carrion. Nests are constructed in sandy banks along slow-moving rivers or considerable distances from water, where suitable nesting conditions exist. Suitable conditions include soil depths equal to or in excess of 4 inches and high humidity. Three to 11 eggs are laid between March and August. The incubation period is approximately 75 days. Sexual maturity is thought to take 8 years. This is the only abundant native turtle in California.

Habitat for this species does not exist on the plan area, however it does exist within the Biological Assessment Area. The watercourse protection measures stated in the plan are sufficient to protect the habitat for this species. Operations proposed as a part of this conversion THP will not result in a significant adverse impact to the western pond turtle.

Fish

Coho salmon, (*Oncorhynchus kisutch*) is a Federally Endangered Species. Coho salmon are anadromous fish that return each year to small streams along the Pacific Coast to spawn. They spend much of their adult lives at sea but always return to the location of their birthplace to lay their eggs. Coho salmon are riffle spawners that typically utilize smaller streams and gravel. Coho Salmon are anadromous salmonids that require access to stream migration, cold, clean, well oxygenated water and prefer the cover of overhanging vegetation, undercut banks, submerged vegetation, rocks, and logs and deep water. Coho typically initiate upstream migration between late October and mid-February. Coho, as a rule, spawn in smaller tributaries than

Chinook salmon. Preferred temperatures to Coho are as follows: Spawning migration $4.0 - 14.0^{\circ}\text{C}$ ($40.0 - 58.0^{\circ}\text{F}$), Rearing $7.2 - 16.7^{\circ}\text{C}$ ($45.0 - 62.0^{\circ}\text{F}$). Redds are laid in gravel that range in size from 1.3 – 10.2 cm in diameter; intergravel mortality occurs when fine sediments exceed 13% of the substrate composition. Embryos hatch after 8 to 12 weeks of incubation. Coho migrate to the ocean at age one and return to fresh water to spawn after 2 to 3 years. While the plan area is not within a "Watershed with Coho Salmon" as defined in 14 CCR 895.1, coho are known to be present in the Gualala River Basin, but are not expected to be negatively impacted.

Steelhead (*Oncorhynchus mykiss irideus*) is listed as threatened under the Endangered Species Act. The proposed timber harvest plan is located within the Northern California ESU for Steelhead. Summer steelhead ascend spawning watercourses in the spring, and hold in deep pools until the fall, when they spawn. The effects of timber harvesting concerning this species are elevated water temperatures and sedimentation of spawning gravels. Steelhead enter river systems during spring and fall, when water levels are sufficient to permit upstream migration. Steelhead mortality at the different life stages are closely affiliated with water temperatures. Preferred temperatures for different stages are as follows: Spawning migration $3.9 - 9.4^{\circ}\text{C}$ ($39 - 49^{\circ}\text{F}$), Egg development 10.0°C (56°F), Rearing $10.0 - 13.0^{\circ}\text{C}$ ($50 - 56^{\circ}\text{F}$). Steelhead prefer to spawn in gravels 0.6 – 10.2 cm in diameter, with eggs developing in approximately 31 days. When fine sediments exceed 13% of the substrate composition, intergravel mortality can occur. Juvenile steelhead spend 1 to 3 years in fresh water habitats before migrating to the ocean. They typically spend 2 years in the ocean before spawning. Although summer and winter steelhead use the same spawning gravels, they are genetically distinct and do not interbreed. Steelhead can utilize smaller tributaries and smaller sized gravels (2-3 in. in diameter) for spawning. Steelhead are known to be present in Buckeye Creek and the Wheatfield Fork of the Gualala River, but are not expected to be negatively impacted.

Chinook (*Oncorhynchus tshawytscha*) is listed as threatened under the Endangered Species Act. The proposed timber harvest plan is located within the California Coastal ESU for Chinook. Sustained water temperatures greater than 80 degrees Fahrenheit are fatal for adult salmon, which will migrate into the headwaters of smaller class I waters to spawn when water is sufficient and debris dams do not prevent access. Chinook salmon are riffle spawners and typically construct redds near the head of riffles in gravel 6 inches or less in diameter. Ideal temperatures for spawning occur between 41-58 degrees Fahrenheit. Chinook salmon prefer to spawn in the main stem of rivers or larger tributaries, but will come further up watercourses depending on the stream flow in any given year. There is no conclusive evidence that Chinook salmon have ever existed in the Wheatfield Fork of the Gualala River or Buckeye Creek. However, there is no reason that Chinook Salmon would not utilize habitat provided by the Wheatfield Fork of the Gualala River or Buckeye Creek. If there is potential Chinook habitat in the Wheatfield Fork of the Gualala River or Buckeye Creek, as is the case for steelhead, the species is not expected to be negatively impacted.

Gualala Roach (*Lavinia symmetricus parvipinnis*) is listed as a Department of Fish and Game Special Concern Species. As its name would indicate, this species is known only to exist within the Gualala River. Roach are warm water adapted species and can survive in water temperatures up to 95°F . The increased water temperatures associated with loss of riparian vegetation and stream aggradation in the Gualala River basin have favored roach over salmonids. However, as riparian areas continue to recover in future decades and the river cools, it is likely that the

Gualala Roach will decrease in abundance in the Gualala River Watershed. This trend has been documented in stream surveys conducted by Fox and Quinn; Ambrosius and Pomeroy; Primbs and Fox in the North Fork of Buckeye Creek. The proposed timberland conversion will not result in an adverse impact to Gualala Roach due to the fact that there will be no timber operations within the WLPZs and EEZs on watercourses adjacent to the timberland conversion areas.

Impacts to all fish species that occur or have habitat located within the assessment area will be minimal. No timber operations will occur within the WLPZs on watercourses adjacent to the timberland conversion areas, which will result in a buffer that provides shade canopy for cooler water temperatures and acts as a trap to reduce sediment inputs. In addition, an Erosion Control Plan has been prepared, which will ensure sedimentation of the watercourses is minimized and a hydrological assessment has been conducted in order to ensure that the beneficial uses of water are not adversely impacted by the proposed operations. For a further discussion of the impact to fisheries resources, please see Chapters 3.4 and 3.7 of the project EIR.

Insects

Behren's silverspot butterfly (*Speyeria zerene behrensii*) is a federally listed endangered species. The butterfly does not have a State status. The Behren's silverspot butterfly is a coastal subspecies of the Zerene silverspot (*Speyeria zerene*), a member of the brush-foot family (Nymphalidae). The Zerene silverspot has six recognized subspecies distributed in northern California, Oregon, and Washington. All of these subspecies occupy restricted habitat types near the coast, and have been seriously affected by human activities. The U.S. Fish and Wildlife Service listed the Behren's silverspot butterfly as an endangered species on December 5, 1997. Critical habitat has not been designated for this species.

The Behren's silverspot butterfly is a medium-sized butterfly with a wingspan of approximately 5.5 centimeters (2.2 inches). The upper surfaces are golden brown with numerous black spots and lines. Wing undersides are brown, orange-brown, and tan with black lines and distinctive silver and black spots. Basal areas of the wings and body are densely pubescent (covered with short, soft hairs).

This butterfly inhabits coastal terrace prairie habitat. Although formal studies have not been conducted on the Behren's silverspot butterfly, the butterfly's life cycle is likely the same as or very similar to that of the closely related Oregon silverspot butterfly (*Speyeria zerene hippolyta*). Studies conducted on the Oregon silverspot butterfly (McCorkle 1980; McCorkle and Hammond 1988) found that females lay their eggs in the debris and dried stems of the larval food plant, the early blue violet (*Viola adunca*). However, other violets (*Viola* spp.) are likely used as well.

The current distribution of the Behren's silverspot butterfly is a single extant site on private land near Point Arena, Mendocino County, California. Behren's silverspot butterfly was historically known from six locations, which extended from the vicinity of the City of Mendocino, Mendocino County, south to the area of Salt Point State Park, Sonoma County.

The closest known record for Behren's silverspot butterfly is located approximately 4.6 miles southwest of the project site. The site of record is located on the coastal bluffs north of Stewart's Point. As this butterfly is known from coastal, and grassland terraces immediately adjacent to the ocean, the butterfly is not expected to be found on the project site. In addition, the butterfly's host plants *Viola* spp., while sparsely present on the project site, occur in densely wooded areas that do not otherwise provide suitable conditions for the butterfly.

Plants

The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California and the NDDDB were queried and the following rare and endangered plants were reported to within 5 miles of the project area:

Common Name Scientific Name	<u>Status</u>	<u>Associated Habitat</u>	Blooming period	Probability on Project Site
Serpentine daisy <i>Erigeron serpentinus</i>	Fed: State: CNPS: List 1B.3	Chaparral (serpentinite), elevation 60-670 meters.	May-August	None. No serpentine habitat present onsite. Would have been detectable during appropriately-timed surveys.
Supple daisy <i>Erigeron supplex</i>	Fed: State: CNPS: List 1B.2	Coastal bluff scrub; coastal prairie; elevation 10-50 meters.	May-July	None. No coastal bluff or coastal prairie habitat present onsite. Would have been detectable during appropriately-timed surveys.
Short-leaved evax <i>Hesperovax sparsiflora brevifolia</i>	Fed: State: CNPS: List 2.2	Coastal bluff scrub; coastal dunes; elevation 0-215 meters	March-June	None. No coastal bluff or dune habitat present onsite. Would have been detectable during appropriately-timed surveys.
Goldfields <i>Lasthenia macrantha bakeri</i>	Fed: State: CNPS: List 1B.2	Closed-cone coniferous forest (openings), meadows and seeps; marshes and swamps; coastal scrub; elevation 60-520 meters.	April-October	None. Suitable habitat present onsite. Would have been detectable during appropriately-timed surveys.
Goldfields <i>Lasthenia macrantha macrantha</i>	Fed: State: CNPS: List 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub; elevation 5-520 meters.	January- November	None. No coastal bluff or dune habitat present onsite. Would have been detectable during appropriately-timed surveys.

Common Name Scientific Name	<u>Status</u>	<u>Associated Habitat</u>	Blooming period	Probability on Project Site
Beaked tracyina <i>Tracyina rostrata</i>	Fed: State: CNPS: List 1B.2	Cismontane woodland; valley and foothill grassland; elevation 90-790 meters	May-June	None. Suitable habitat present onsite. Would have been detectable during appropriately- timed surveys.
Secund jewelflower <i>Streptanthus glandulosus hoffmani</i>	Fed: State: CNPS: List 1B.3	Chaparral; cismontane woodland; valley and foothill grassland (rocky, often serpentinite); elevation 120-475 meters.	March-July	None. Suitable habitat present onsite. Would have been detectable during appropriately- timed surveys.
Three Peaks jewelflower <i>Streptanthus morrisonii elatus</i>	Fed: FC State: CNPS: List 1B.2	Chaparral (serpentinite); elevation 90-815 meters.	June- September	None. No serpentine habitat present onsite. Would have been detectable during appropriately-timed surveys.
Dorr's Cabin jewelflower <i>Streptanthus morrisonii hirtiflorus</i>	Fed: FC State: CNPS: List 1B.2	Chaparral [serpentinite]; closedcone coniferous forest; elevation 185-820 meters.	June-June	None. Suitable habitat present onsite. Would have been detectable during appropriately- timed surveys.
Morrison's jewelflower <i>Streptanthus morrisonii morrisonii</i>	Fed: State: CNPS: List 1B.2	Chaparral (serpentinite, rocky talus); elevation 120- 585 meters.	May- September	None. No serpentine or talus habitat present onsite. Would have been detectable during appropriately-timed surveys.
Swamp bellflower <i>Campanula californica</i>	Fed: State: CNPS: List 1B.2	Bogs & fens; closed-cone coniferous forest; coastal prairie; meadows; marshes & swamps (freshwater); north coast coniferous forest (mesic); elevation 1- 405 meters.	June-October	None. Suitable habitat present onsite. Would have been detectable during appropriately- timed surveys.
Coastal bluff morning-glory <i>Calystegia purpurata saxicola</i>	Fed: State: CNPS: List 1B.2	Coastal dunes, coastal scrub; elevation 10-105 meters.	May- September	None. No coastal bluff or coastal dune habitat present onsite. Would have been detectable during appropriately- timed surveys.
Pygmy cypress <i>Cupressus goveniana pigmaea</i>	Fed: State: CNPS: List 1B.2	Closed-cone coniferous forest (usually podzol-like soil), elevation 30-500 meters.	March-March	None. No suitable habitat present onsite. Would have been detectable.

Common Name Scientific Name	<u>Status</u>	<u>Associated Habitat</u>	Blooming period	Probability on Project Site
Deceiving sedge <i>Carex saliniformis</i>	Fed: State: CNPS: List 1B.2	Closed-cone coniferous forest (usually podzol-like soil), elevation 30-500 meters.	June-June	None. No suitable habitat present onsite. Would have been detectable during appropriately-timed surveys.
The Cedars manzanita <i>Arctostaphylos bakeri sublaevis</i>	Fed: State: CR CNPS: List 1B.2	Closed-cone coniferous forest; chaparral; [serpentine seeps]; elevation 185-760 meters.	February-May	None. Suitable habitat present onsite. Would have been detectable during appropriately-timed surveys.
California indigobush <i>Amorpha californica napensis</i>	Fed: State: CNPS: List 1B.2	Broad-leaved upland forest (openings); chaparral; cismontane woodland; elevation 120-2,000 meters	April-July	None. Suitable habitat present onsite. Would have been detectable during appropriately-timed surveys.
Cobb Mountain lupine <i>Lupinus sericatus</i>	Fed: State: CNPS: List 1B.2	Broadleaved upland forest; chaparral; cismontane woodland; lower montane coniferous forest; elevation 275-1,525 meters.	March-June	None. Suitable habitat present onsite. Would have been detectable during appropriately-timed surveys.
Cedars fairy lantern <i>Calochortus raichei</i>	Fed: State: CNPS: List 1B.2	Closed-cone coniferous forest; chaparral [serpentine]; elevation 00-490 meters.	May-August	None. Suitable habitat present onsite. Would have been detectable during appropriately-timed surveys.
Coast lily <i>Lilium maritimum</i>	Fed: C State: CNPS: List 1B.1	Broadleaved upland forest; closed-cone coniferous forest; coastal prairie; coastal scrub; northcoast coniferous forest; marshes and swamps; elevation 5-335 meters.	May-August	None. Suitable habitat present onsite. Would have been detectable during appropriately-timed surveys.
Point Reyes checkerbloom <i>Sidalcea calycosa rhizomata</i>	Fed: State: CNPS: List 1B.2	Freshwater marshes and swamps, near coast; elevation 3-75 meters.	April-September	None. No suitable habitat present onsite. Would have been detectable during appropriately-timed surveys.
Maple-leaved checkerbloom <i>Sidalcea malachroides</i>	Fed: State: CNPS: List 1B.2	Broadleaved upland forest; coastal prairie; north coast coniferous forest; coastal scrub riparian woodland [often in disturbed areas]. Elevation 2-730 meters.	April-August	None. Suitable habitat present onsite. Would have been detectable during appropriately timed surveys.
Checker mallow <i>Sidalcea malvaeflora purpurea</i>	Fed: State: CNPS: List 1B.2	Broadleaved upland forest, coastal prairie. Elevation 15-65 meters.	May-May	None. No suitable habitat present onsite. Would have been detectable during appropriately-

Common Name Scientific Name	<u>Status</u>	<u>Associated Habitat</u>	Blooming period	Probability on Project Site
				timed surveys.
Blasdale's bent grass <i>Agrostis blasdalei</i>	Fed: State: CNPS: List 1B.2	Coastal bluff scrub; coastal dunes; coastal prairie. Elevation 5-150 meters.	May-July	None. No suitable habitat present onsite. Would have been detectable during appropriately-timed surveys.
Globe gilia <i>Gilia capitata tomentosa</i>	Fed: State: CNPS: List 1B.1	Coastal bluff scrub (rocky, outcrops). Elevation 15-155 meters.	May-July	None. No coastal bluff scrub habitat present onsite. Would have been detectable during appropriately-timed surveys.
Dark-eyed gilia <i>Gilia millefoliata</i>	Fed: State: CNPS: List 1B.2	Coastal dunes; elevation 2-30 meters.	April-July	None. No suitable dune habitat present onsite. Would have been detectable during appropriately-timed surveys.
Rose leptosiphon <i>Leptosiphon rosaceus</i>	Fed: State: CNPS: List 1B.1	Coastal bluff scrub; elevation 0-100 meters.	April-July	None. No coastal bluff scrub habitat present onsite. Would have been detectable during appropriately-timed surveys.
Sonoma spineflower <i>Chorizanthe valida</i>	Fed: FE State: CE CNPS: List 1B.1	Coastal prairie (sandy). Elevation 10-305 meters.	June-August	None. No coastal bluff scrub habitat present onsite. Would have been detectable during appropriately-timed surveys.
Snow Mountain buckwheat <i>Eriogonum nervulosum</i>	Fed: State: CNPS: List 1B.2	Chaparral (serpentinite). Elevation 300-2,105 meters.	June-September	None. No suitable habitat present onsite. Would have been detectable during appropriately-timed surveys.
Holly-leaf ceanothus <i>Ceanothus purpureus</i>	Fed: State: CNPS: List 1B.2	Chaparral (serpentinite). Elevation 300-2,105 meters.	February-June	None. No serpentine habitat present onsite. Would have been detectable during appropriately-timed surveys.
Thin-lobed horkelia <i>Horkelia tenuiloba</i>	Fed: State: CNPS: List 1B.2	Chaparral; cismontane woodland (volcanic, rocky). Elevation 120- 640 meters.	May-July	Present on site. See further discussion below

Impacts to special-status plant species.

As noted above, thin-lobed horkelia has been identified on the project site and the proposed project would result in minor impacts to this plant. The plant is not protected under either the State or Federal Endangered Species Acts, nor is the plant protected pursuant to any special state or federal regulation or law. However, the thin-lobed horkelia is a CNPS List 1B.2 species. According to the CNPS, all of the plants constituting List 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the CDFG Code, and thus would be eligible for state listing (CNPS 2001). CDFG requires their discussion in CEQA documents.

The majority of the project site does not support thin-lobed horkelia. Rather the plant is found primarily in the Northern Coastal Grassland habitat on the southwestern portion of the project site. Small numbers of thin-lobed horkelia would be impacted by the proposed vineyard project and by proposed wetland creation within a portion of the project site that would be preserved in perpetuity. Project activities that could adversely affect this plant include earth-moving/grading activity that kills individual plants, and earth-moving/grading activity that alters the hydrology of the project site, effectively removing natural irrigation from the meadow where these plants currently thrive. The above listed activities would be regarded as significant adverse impacts. To reduce impacts to thin-lobed horkelia, the applicant has agreed to the following mitigation measure:

Prior to the issuance of a grading permit, the applicant shall set aside approximately 18 acres for a Horkelia tenuiloba reserve. The reserve shall be dedicated in perpetuity through a permanent deed restriction recorded on the title of the property. The reserve area shall not be developed. Timber operations in the areas adjacent to the reserve shall use directional falling so that timber marked for removal falls away from the reserve area. Heavy equipment and vehicles shall be excluded from the reserve area during project development and operations. Following completion of vineyard development activities, the applicant shall ensure that any herbicide applications which may take place in the nearby vineyard unit(s) do not affect or enter the horkelia reserve. This plan shall be subject to the review and approval of the Department of Forestry and the Sonoma County Permit and Resource Management Department.

Impacts to a unique manzanita complex.

Annapolis manzanita has been identified on the project site. Annapolis manzanita is a hybrid manzanita unique to the Annapolis area. Two Annapolis manzanita populations occur on the project site. Annapolis manzanita does not have any state or federal status, nor is the plant listed by CNPS. However, because of the uniqueness of this population, Dr. Tom Parker and Mr. Michael Vasey of San Francisco State University recommended that the proposed project include incorporation of protection measures for Annapolis manzanita until further studies have been conducted. Because CEQA documents will take into account the local or unique rarity of a species and require protection for these locally unique or locally rare species, any impacts to Annapolis manzanita must be considered significant and adverse pursuant to CEQA.

To reduce impacts to Annapolis manzanita, the applicant has agreed to the following mitigation measure: *Prior to issuance of a grading permit, the applicant shall set aside an area totaling approximately 4.4 acres on the east side of the project site (see Figure 3.4-3) for the preservation of Annapolis manzanita identified on the Artesa property. The reserve shall be dedicated in perpetuity through a permanent deed restriction recorded on the title of the property. The reserve area shall not be developed. Timber operations in the areas adjacent to the preserve shall use directional falling so that timber marked for removal falls away from the reserve area. Heavy equipment and vehicles shall be excluded from the reserve area during project development and operations. Following completion of vineyard development activities, the applicant shall ensure that any herbicide applications which may take place in the nearby vineyard unit(s) do not affect or enter the Annapolis manzanita reserve. The plan shall be subject to the review and approval of the Department of Forestry and the Sonoma County Permit and Resource Management Department.*

Aquatic and near-water habitat conditions

Pools and Riffles: These habitats are not located within the Conversion THP area but are found downstream from the plan area. Pools are formed by the interaction of the watercourse with topographic features and by the presence of woody debris in watercourse channels. The pool and riffle content of watercourses can be altered through changes in waterflow and the content of sediment, woody debris and large boulders in the channels. As a part of the proposed conversion THP, no operations will take place within WLPZs adjacent to the conversion THP area. These no operations zones along with measures proposed in the Erosion Control Plan will prevent increases in the sediment content of downstream watercourses and will prevent the direct input of woody debris to these watercourses. The proposed application of no operations zones along watercourses coupled with soil stabilization measures proposed in the ECP will effectively prevent any direct changes to the pool and riffle content of the downstream watercourses. As such, the proposed conversion THP and vineyard development will not adversely affect or alter the pool and riffle content of the downstream watercourses. Please see the discussion of pools above under the "Watercourse Condition" heading for a further analysis of pools and riffles.

Large Woody Debris: Large woody debris (LWD) is a very important component in the creation of pool habitat in streams. Rainville et al. (1985) found that in nearly 80% of the pools surveyed in small streams, LWD was the structural agent forming the pool or associated with the pool. The amount of large woody debris present in the watercourses in the assessment area varies widely. The proposed conversion THP will not result in an adverse impact to future LWD recruitment as there will be no operations within WLPZs on watercourses adjacent to the plan area. It is likely that LWD recruitment along these watercourses will increase over time due to the elimination of timber harvesting in the watercourse protection zones. Please see the discussion of organic debris above under the "Watercourse Condition" heading for a further analysis of large woody debris.

Near-Water Vegetation: Due to the establishment of no operations zones adjacent to watercourses, near-water vegetation will not be reduced as a result of timber operations. Shade canopy provided by the near water vegetation currently ranges from 75% to 100% where these watercourses flow through wooded areas. Near water vegetation is generally composed of Douglas-fir, redwood, California bay, and madrone. Establishment of WLPZ no operations zones will effectively maintain existing near-water vegetation, therefore the proposed conversion THP will not have an adverse impact on near-water vegetation. Please see the discussion of stream-side vegetation above under the "Watercourse Condition" heading for a further analysis of near-water vegetation.

Terrestrial habitat conditions

1) Snags, Dens and Nest Trees: Snags, den trees, nest trees and their recruitment are required elements in the overall habitat needs of more than 160 wildlife species. Many of these species play a vital role in maintaining the overall health of timberlands. Snags of greatest value are >16" DBH and 20 ft. in height. The proposed timberland conversion will not result in a significant adverse impact to the snag, den and nest tree component of the biological assessment area. Very few snags are currently located within the conversion THP area because the majority of the plan area was converted to agricultural use or grazing in the past. These areas have largely reverted to a natural state and now consist of young growth Redwood, and Douglas-fir intermixed with tanoak. No dens were observed on the conversion THP area during plan preparation therefore, reduction in den habitat is unlikely to result from the proposed conversion operations. Nest trees located within the conversion THP area will be harvested. In the event that an active nest of a listed bird species is discovered it shall be protected as described under Item 32 in Section II of the THP. Removal of nest trees within the conversion THP area will not result in a significant reduction in nest tree habitat due to the fact that a very small percentage of potential nest tree habitat in the Biological Assessment Area will be removed. All snags, dens and nest trees located on the plan submitter's property outside of the project area will be protected through the establishment of habitat reserves.

2) Downed Large Woody Debris: Large downed logs (particularly conifers) in the upland and near-water environment in all stages of decomposition provide an important habitat for many wildlife species. Large woody debris of greatest value consists of downed logs >16" diameter at the large end and >20 feet in length. Existing downed large woody debris within the conversion THP area that meet the dimensions above will be piled outside of the conversion area and left for use by wildlife. The remaining woody debris will be piled and burned on site upon completion of harvesting operations. As such, the proposed conversion THP will result in the elimination of a small portion of the downed large woody debris within the conversion THP area. The elimination of the small portion of the downed large woody debris within the conversion THP area will not result in a significant affect on the downed woody debris component of the Biological Assessment area as the conversion THP area only accounts for a very small percentage of the Biological Assessment area.

3) Multistory Canopy: Multistoried stands are defined as stands composed of two or more canopy layers. Multistoried stands contribute to vertical heterogeneity of stands and influence species diversity. Multi-storied stands are relatively uncommon in the BAA due to the logging

history. Redwood, Douglas fir, and tanoak are the key understory components in most of the two layered stands observed. The conversion THP area does not currently contain conifer stands with a true multistory canopy structure. Stands on the plan area generally consist of young growth Douglas-fir and Redwood and a hardwood component. While there are scattered dominant residual trees, these do not make up a second story. As such, the proposed conversion THP will not result in an adverse impact to the amount of multistory canopy structure within the Biological Assessment area.

4) Road density: The primary concerns for excessive road density are the disturbance, displacement and fragmentation of wildlife habitats and mortality of wildlife. For example, declines have been noted in the use of areas adjacent to frequently traveled roads by deer and bear. Deer and bear populations have a permanent home range within the assessment area. Road densities in the Gualala Basin average approximately 4.8 miles per square mile with densities in the assessment area approaching 6 miles per square mile. The amount of frequently traveled permanent and secondary roads will not increase as a result of the proposed conversion THP. The only roads proposed for construction during timber operations are temporary roads. The existing access roads to the conversion THP area will be reused as a part of timber harvesting and vineyard development and maintenance. Vehicle access to the vineyard units will be via encroachments at the existing permanent roads that access the conversion plan area/vineyard units and then along "vineyard avenues" within the vineyard units and new perimeter roads. As such the proposed project will not have an adverse impact on wildlife use as a result of increased road use and or construction.

5) Hardwood cover: Hardwoods are an important component of habitat diversity within the coniferous forest, as they provide a rich source of food and cover to mammals, birds and insects. Stands within the conversion THP area include a component of hardwoods. Hardwood composition on the conversion THP area includes tanoak, madrone and California bay. The proposed conversion THP will eliminate all hardwood cover on the THP area. All hardwoods will be retained in the adjacent portions of the property within proposed habitat reserves. This conversion of hardwood cover accounts for a very small portion of the Biological Assessment Area. This reduction in the hardwood cover of the Biological Assessment area will not result in a significant adverse impact to the hardwood cover of the Biological Assessment Area.

6) Late Seral (Mature) Forest: The characteristics of a late seral forest include large trees as part of a multilayered canopy and the presence of large numbers of snags and downed logs that contribute to an increased level of stand decadence. Currently there is no late seral stage (LSS) forest on the conversion THP area. As such, the proposed project will not result in an adverse impact to the late seral mature forest components and continuity of the Biological Assessment Area. The "Soda Springs Reserve" which is approximately 50 acres, is located just outside of the assessment area and is the closest area to the THP that provides this type of habitat. This is an "Old Growth" reserve located north of the conversion THP area that provides (LSS) habitat.

7) Special Habitat Elements: Some wildlife species require special habitats or habitat elements to exist. The loss of a key habitat element may have a profound effect on a species even though the habitat is otherwise suitable. Each species may have several key limiting factors to consider. The conversion THP area however does not contain any significant or limiting "special

consider. The conversion THP area however does not contain any significant or limiting "special habitat elements". Vernal pools, bogs, migratory routes, rock outcroppings, raptor nest trees, perennial or ephemeral springs are not located on the conversion THP area. The habitat that will be affected by the proposed operations exists throughout the assessment area and the small portion of the assessment area that will be affected will not result in a significant adverse impact.

Other Biological Habitat Factors/Conditions

Habitat Fragmentation/Wildlife Corridors: The proposed project would result in the conversion of approximately 154 acres of existing North Coast Coniferous Forest, Northern Coastal Grasslands, and Coastal Scrub plant communities to vineyards and vineyard support infrastructure. These vegetation communities support the foraging and nesting activities of various wildlife species on the project site, and therefore, the timber harvest and vineyard construction associated with the proposed project could result in direct adverse impacts to the movement patterns of individual animals using the proposed timber conversion area as a movement or migration corridor.

However, disruption of wildlife habitat and activities due to the proposed project would be minimized to the extent feasible through the provision of suitable movement corridors between the vineyard units. The applicant would preserve wildlife corridors within the project area by fencing only the vineyard units, and incorporating remaining natural habitat, such as mixed-hardwood or oak woodland, riparian areas, and other high-use habitats and elements, into the site plan. Fencing around the vineyard units would include a number of "escape gates" to allow for the safe release of deer or other wildlife, should they become trapped in the vineyard units. The applicant would protect approximately 151 acres with conservation easements on the site, part of which would preserve a wildlife corridor running the length of upper Patchett Creek on the eastern portion of the property. The streamside conservation area would be a minimum of 100 feet in width, on either side of the creek as measured from the top of bank. All other tributaries would be protected in buffers that are 25 to 75 feet in width, on either side of the top-of-banks. All streamside conservation areas on the project site would be dedicated in permanently protected deed restricted areas. Canopy cover in this area ranges from 50 percent to 100 percent, and the existing vegetation, including redwood, Douglas-fir, and riparian vegetation, would not be removed. In addition, the 15.6-acre thin-lobed Horkelia preserve would protect a wetland area and would provide a corridor for wildlife to move from the west side of the project to areas south of the project site, including the Patchett Creek headwaters.

Mitigations Proposed to Prevent Adverse Impacts to the Biological Assessment Area:

- 1.) A 15.6 acre Horkelia tenuiloba reserve shall be established and dedicated in perpetuity through a permanent deed restriction recorded on the title of the property.
- 2.) A 4.4 acre manzanita reserve shall be established and dedicated in perpetuity through a permanent deed restriction recorded on the title of the property.
- 3.) Streamside conservation areas on the project site totaling approximately 151 acres shall be preserved to protect the beneficial uses of the watershed and provide wildlife habitat.

PART OF PLAN

RECEIVED

JAN 20 2011

The conservation areas will be recorded as permanent deed restrictions on the title of the property that run with the title in perpetuity.

- 4.) No timber harvest operations shall occur until such time as CAL FIRE has reviewed all survey and habitat information required by 919.9 (provided in Section V of the THP), has determined pursuant to 14 CCR 919.10 that take of an NSO will not occur and the CAL FIRE take determination has been amended into the THP. Any change in timber operations that results from a change in location, or the discovery, of an NSO after plan approval will have to be incorporated into the plan through the amendment process.
- 5.) Fencing shall only be constructed around vineyard units, which will result in the maintenance of wildlife corridors between the proposed vineyard units.
- 6.) 1.24 acres of mitigation wetlands shall be created to off set the loss of 0.418 acres of waters of the U.S. and State.
- 7.) Additional species specific mitigation measures are listed under Item 32 in Section II of the THP.

PART OF PLAN

RECEIVED

JUN 10 2009

COAST AREA OFFICE
RESOURCE MANAGEMENT

4. Recreational Resources:

PAST AND FUTURE PROJECTS

The past and future projects for the Recreational Assessment Area are the same as those listed under the Soil Productivity Assessment Area. Please refer to the Soil Productivity Assessment Area for a discussion of past and future projects for the Recreation Assessment Area.

1. Identification of recreational activities: Recreational use of the property itself is limited to the landowner and guests and is low intensity. However, adjacent landowners access their properties on roads that go through the conversion THP area and within 300 feet of the project area is a paved public road. Landowners utilizing the access roads through the operation area and the public utilizing the county road may participate in recreational activities such as sightseeing, hiking and bird watching. These activities may be impacted visually and will be addressed under visual resources below.
2. No recreational special treatment areas have been designated by the Board of Forestry or County of Sonoma within or adjacent to the plan area. Timber operations will be conducted primarily during the week on private property and therefore will not impact significant numbers of people.

The operations proposed under the THP do not have a reasonable potential to join with the impacts of any other project to cause significant cumulative impacts to recreational resources.

5. Visual Resources:

PAST AND FUTURE PROJECTS

The past projects in the Visual Assessment Area are the same as those discussed above under Watershed Assessment and Biological Assessment. Please refer to the Watershed Assessment and Biological Assessment Area discussions for a list of past and future projects for the Visual Assessment Area.

1. There are no Special Treatment Areas designated by the Board of Forestry on or near the project area.
2. The plan area is visible from the ridges and ridgetops surrounding the plan area and from Annapolis Road located adjacent to the plan area and permanent access roads located on the plan area. Viewpoints from surrounding ridgetops are limited by distance and topography as they are half a mile to greater than a mile from the conversion THP area. These viewpoints are accessed via private property and as such are not readily visible to significant numbers of people. The conversion THP area as viewed from Annapolis Road and access roads on the project area are visible to significant numbers of people and will be the focus of the visual assessment.
3. People utilizing Annapolis Road and access roads on the project area will primarily view the

proposed operation from a vehicle on a public road.

The Sonoma County General Plan defines scenic resources under three open space categories in the Open Space Element: community separators, scenic landscape units, and scenic highway corridors. As indicated on Figure OS-2 in the Sonoma County General Plan, the project site does not lie within a scenic landscape unit, a community separator, or a scenic highway corridor. The Sonoma County General Plan EIR also divides the County into distinct visual units. The project site is located in the Mendocino Highlands (Visual Unit #2). According to the Sonoma County General Plan EIR (pg. 5), mitigation measures will reduce the level of impact on visual units (and scenic backdrops) to an insignificant level. These mitigation measures do not apply to the project site. For example, VR-2.1 states "Highway 1, the proposed by-pass, Cazadero Highway, Bohemian Highway, Jonive Road, Coleman Valley Road, and Stewarts Point/Skaggs Springs Road are designated as scenic highways." None of the above mentioned roads are located adjacent to the project property. Furthermore, the proposed vineyard use is consistent with the type of development/use anticipated for the project site in the General Plan.

Scenic views of the property from Annapolis Road will be altered from existing views of timberland and grassland to views of vineyard rows. However, the Sonoma County General Plan indicates that vineyards are highly valued landscapes within the County. In addition, the Scenic Resources Section in the Open Space Element of the Sonoma County General Plan is primarily concerned with maintenance of the openness of the scenic resources, which provides important visual relief from urban densities (General Plan, p. 175). Because the proposed project would not involve the construction of numerous buildings or result in any other urbanization, implementation of the project would result in a change from one rural setting (timberland) to another (vineyard), thereby preserving the "openness" of the project site.

Several residential properties surround the project site, including the Starcross Monastic Community (34500 Annapolis Road) located north of the project site, and five rural residences located immediately northwest, west, and south of the project site. The visual impact to people that utilize the permanent access roads (driveways) on the plan will be greatest. Neighbors that use these roads have become accustomed to and place value on the timberland and grassland along the driveways to their properties. As noted previously, the project site is currently void of development and views of the site from nearby residences consist of forest and grassland scenery. The proposed project would substantially alter the existing views; however, a substantial number of trees would remain on the project site as only 186 acres of the 324-acre site would be included in the vineyard area. Furthermore, the streamside conservation areas, cultural resources sites, biological reserves, and natural topographic relief would serve to break the vineyard area into smaller, less visually pronounced areas. As a result, the existing grassland and forest views would be replaced with a mixture of vineyards and forests.

Trees and forested areas are typically considered aesthetically pleasing visual resources. Once a timber conversion occurs, the forested visual character of a site is, for practical purposes, permanently lost. (It should be noted, however, that enjoyment of forest scenery as opposed to vineyard scenery, which can also be considered aesthetically pleasing, is a matter of personal preference.) In the absence of specific standards within planning documents impacts to

RECEIVED

MAY 21 2010

PART OF PLAN

viewsheds are highly subjective. However, as discussed above, vineyards are considered to be a highly valued landscape within Sonoma County.

By one estimate, Sonoma County has seen over 26,000 acres of vineyard added between June 1997 and April 2007 (see DEIR page 3.2-26). The vast majority of this vineyard expansion has occurred in non-timberland areas. Nonetheless, recent timberland conversion activities in Sonoma County have included an increasing amount of vineyard development. However, as discussed in Impact Statement 3.2-5 of the DEIR, the proposed project is consistent with General Plan policies related to timber production and timber land conversion.

The proposed project, in conjunction with past and future timberland conversions to vineyard in Sonoma County, would contribute to a cumulative loss of timberland and associated aesthetic qualities. Cumulative development in areas identified as scenic landscape units by the Sonoma County General Plan would be considered to be significant; however, development in areas not designated as scenic, where the proposed project is located, would not be considered significant. Therefore, while the existing views would be altered, the cumulative impact to visual resources is considered to be *less-than-significant*.

Please see a further discussion of visual/aesthetics impacts included within Chapter 3.11 of the Environmental Impact Report.

6. Traffic:

Logs will be hauled off the conversion THP area via a private road system to Annapolis Road (a paved county road) then either 1) west to Highway 1 or 2) east to Skaggs Springs Road (a paved county road), then east on Skaggs Springs Road to Dry Creek Road, and east on Dry Creek Road to State Highway 101. All of these roads were used historically for log transport, and they are currently being used for log and grape transport today. These routes are used primarily by residents of the area and tourists as well as commercial use for grape transport and log transport and commercial delivery use for residents.

Hauling associated with the proposed timber operation will generally take place on weekdays, when tourist traffic is at a minimum, thus minimizing any potential adverse effect log hauling as a part of this THP could have on current traffic conditions. Due to the relatively low volume of conifer to be removed from the plan area the proposed hauling operations will be of short duration. It is expected that approximately 250 loads of logs will be removed from the project area and that operations will occur over a 3 month period. In addition, traffic associated with personnel conducting the logging operations is expected to be very low as the personnel will stay on site or near by during operations. Log hauling on these roads occurs regularly and use of these roads for the transport of logs as a part of this conversion THP will not change the current flow of traffic present on the haul route. As such, the proposed harvest activity will have a nominal impact on the present traffic conditions along the haul route.

Please see a further discussion of traffic impacts included within Chapter 3.9 of the Environmental Impact Report.

H. Additional Cumulative Impact Information for Climate Change

Global climate change and the variables that influence this change are subject to intensive scientific investigation and debate. Green Houses Gasses (GHG) like carbon dioxide (CO₂) are believed to be increasing and tend to warm the planet. In response, the State of California has enacted legislation and policies designed to reduce GHG emissions and to increase energy efficiency (AB 1493, 2002; AB 32, 2006; Governor Schwarzenegger Executive Order S-3-05). In California, the California Global Warming Solutions Act of 2006 (Assembly Bill 32) is the states legislative effort at reducing GHG emissions to 1990 levels by 2020. This statute attempts to address global warming by establishing goals and measures for reducing GHG emissions. To aid in this directive, the California Air Resources Board (CARB) has developed a scoping plan that outlines the State's strategy to achieve 2020 GHS emission limits. The scoping plan recognizes that California's forestlands reduce GHG emissions by sequestering atmospheric carbon and are currently a carbon sink (atmospheric removal of carbon through sequestration is greater than atmospheric emissions from processes like fire and decomposition of wood). The 2020 Scoping Plan current target for California's forest sector is to maintain sequestration through sustainable forest management practices, reducing the risk of catastrophic wildfire and the avoidance or mitigation of land-use changes that reduce carbon storage.

Forestry activities may release CO₂ through disturbance effects associated with tree cutting, road, landing and skid trail construction, site preparation by mechanical methods or burning and potentially chemical treatment of hardwoods. Equipment operation emits CO₂ through the burning of fossil fuels primarily diesel and gasoline during road construction, skidding, loading and hauling of timber products. Forest emissions can also occur through wildfire, pest mortality and other natural and anthropogenic events.

The proposed project would convert forests and grasslands to vineyards, a reservoir, corporation yard, and roads. Out of a total of 324 acres, the proposed project includes the logging of the 154-acre timberland conversion area and developing approximately 19 acres of grassland. Approximately 173 acres would then be developed as a vineyard, including the cover cropped paths between the vines. The remaining 151 acres would be included in a permanent forest/habitat reserve.

A detailed analysis was conducted to estimate the total amount of greenhouse emissions that would result from all facets of the proposed on-site timber harvest operations. The analysis was made by the RPF and included utilizing CAL FIRE's recently released Greenhouse Emissions Calculator. The analysis shows that the proposed project sequesters more carbon over the 100-year analysis period than a business as usual scenario. This is due to the inclusion of the 151-acre forest reserve as a project mitigation. As the redwood forest type has the potential to sequester carbon over long periods of time, the forest reserve creates the potential for significant carbon sequestration.

Currently, thresholds of significance for GHGs have not been identified by either the ARB, or the NSCAPCD. Early actions proposed by the ARB are not strictly applicable to the proposed project, and the proposed project would be subject to any applicable State regulations as they are developed. Furthermore, in the context of statewide, nationwide, or global emissions, and considering the carbon sequestration that would continue to occur once the vineyards are planted, the proposed project's incremental contribution to this cumulative impact would not be cumulatively considerable. Therefore, the proposed project would have a less-than-significant impact on climate change.

Please see Sec. 4-3 of the DEIR for additional information

PART OF PLAN

RECEIVED
JAN 20 2011
COAST AREA OFFICE
RESOURCE MANAGEMENT

The following sources of information or persons were consulted for preparation of the Cumulative Impacts Assessment.

1. Annapolis, Stewarts Point, McGuire Ridge, and Gube Mountain 7.5 minute quadrangle maps.
2. Barclays Official California Code of Regulations, Title 14. Natural Resources, Vol. 18; Barclays Law Publishers, 1990.
3. Brown, L.R., P.B. Moyle, and R.M. Yoshiyama. 1994. Historical Decline and Current Status of Coho Salmon in California. *North American Journal of Fisheries Management.* 14(2):237-261.
4. Buridge, Betty. 1995. *Sonoma County Breeding Bird Atlas.* Madrone Audubon Society.
5. CA Department of Fish and Game. 1998. California Salmonid Stream Habitat Restoration Manual. Third Edition. Inland Fisheries Division. California Department of Fish and Game. Sacramento, CA. 495 p.
6. California Department of Fish and Game, Natural Diversity Data Base, Ornbau Valley, Stewarts Point, Plantation, Fort Ross and Annapolis 7.5 minute quadrangles.
7. California Regional Water Quality Control Board (CRWQCB). 2001. Gualala River Watershed TMDL Technical Support Document for Sediment. CRWQCB, Region 1. Santa Rosa, CA. 147 pp
8. "California's Wildlife", volumes I, II and III published by the Department of Fish and Game, May 1988, Nov. 1990, and April 1990.
9. California Wildlife Habitat Relationships System (WHR); California Interagency Wildlife Task Group, California Department of Fish and Game, Version 7.0.
10. CDF Archives for THP Records; Santa Rosa CDF Office.
11. "Coho Salmon Considerations for Timber Harvest under the California Forest Practice Rules", California Department of Forestry and Fire Protection, April 1997.
12. Cumulative Impacts Assessment Workshop Binder; CLFA, Redding, CA., September 1991.
13. Geologic Map of California, Santa Rosa Sheet, State of California, the Resources Agency Department of Conservation Division of Mines and Geology, Third Printing 1992.
14. Geologic Map Exclusive of Landslides, Northern Sonoma County; Prepared by the California Division of Mines and Geology in Cooperation with the Sonoma County Planning Department; Compiled by Knox, Richard D. and Huffman, Micheal E. 1980.
15. Higgins, P.T. 1997. Gualala River Watershed Literature Search and Assimilation. Funded by the Coastal Conservancy under contract to Redwood Coast Land Conservancy. Gualala, CA. 59 pp.
16. Klamath Resource Information System, 2003. KRIS Gualala Project
17. Klamt, Robert R., C. LeDoux-Bloom, J. Clements, M. Fuller , D. Morse, and M. Scruggs (multi-disciplinary team leads). 2002. Gualala River Watershed Assessment Report. North Coast Watershed Assessment Program, 367pp plus Appendices. California Resources Agency, and California Environmental Protection Agency, Sacramento, California.
18. Landslides and Relative Slope Stability, Northern Sonoma County; Special Report 120 Plate 2A; Huffman, Micheal E.; 1980.
19. Orthophotos, WAC Corporation, 520 Conger Street, Eugene, OR, 97402, 4/28/96.

20. Raphael, Martin G. 1984. Wildlife Populations in Relation to Stand Age and Area in Douglas Fir Forests of Northwestern California. Proceedings of a Symposium. American Institute of Fishery Research Biologists.
21. Raphael, Martin G and Barrett, Reginald. 1985. Diversity and Abundance of Wildlife in Late Successional Douglas-fir Forests.
22. Rainville R.P., Rainville S.C., and Lider E.L., 1985 Riparian Silviculture Strategies for Fish Habitat Emphasis. Pages 186-189 in Silviculture for Wildlife and Fish: A Time for Leadership. Proceedings, 1985 Wildlife and Fish Ecology Working Group. Society of American Foresters. Bethesda, MD.
23. Skinner M.W, and B.M. Pavlik, eds. 1994. *Inventory of Rare and Endangered Vascular Plants of California*. California Native Plant Society Special Publication No.1 (fifth edition). Sacramento, CA. vi +338pp.
24. Small, Arnold; California Birds: Their Status and Distribution; IBIS Publishing Company; 1994.
25. Soil Survey of Sonoma County, California. USDA Forest Service and Soil Conservation Service, in cooperation with U.C. Agriculture Experiment Station. May 1972.
26. State Water Resources Control Board Resolution No. 98-055. "Approval of the 1998 California Section 303(d) List and Total Maximum Daily Load Priority Schedule.
27. U.S. Environmental Protection Agency, 2001. The Gualala River Total Maximum Daily Load for Sediment
28. Water Quality Control Plan for the North Coast Region, Approved by the North Coast Regional Water Quality Control Board on April 28, 1988 and the State Water Resources Control Board on November 15, 1988, North Coast Regional Water Quality Control Board.
29. Weaver, W.E., and D.K. Hagans. 1994. Handbook for Forest and Ranch Roads - A Guide for Planning, Designing, Constructing, Reconstructing, Maintaining and Closing Wildland Roads. Prepared for the Mendocino County Resource Conservation District, Ukiah, California. 161 pp.