Shelterwood Bearpen CalVTP # 2022-34

Project Specific Analysis and Addendum to the CalVTP PEIR

Prepared for:

Shelterwood Collective

23500 King Ridge Rd

Cazadero, CA 95421

Prepared by:

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Frontier Resource Management, LLC

8/28/23

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ATTACHMENTS

Common Terms and Acronyms Key:

% Canopy Cover: An average percentage of the sky that is covered by overstory or understory canopy as measured with a densitometer utilizing random plot survey methods.

% Live Crown = (Height of live crown / Total tree height) X 100

CalVTP: California Vegetation Treatment Program

CFMP: Cooperative Forest Management Plan

CNDDB: California Natural Diversity Database

CNPS: California Native Plant Society

DBH: Diameter at Breast Height

Dead and Down: Vegetation that is dead and either in contact with the forest floor or standing.

Lop and Scatter: Vegetation treatment technique where removed branches, shrubs, and trees are cut into manageable pieces and scattered around a treatment area to slowly break down into the ground over time.

LRA: Local Responsibility Area

LWD: Large Woody Debris. Existing downed logs which are highly valuable to wildlife.RPF: Registered Professional Forester.

MM: Mitigation measures

MMRP: Mitigation monitoring and reporting program

PCA: Pest Control Advisor

PEIR: Program Environmental Impact Report

PSA: Project Specific Analysis

QAL: Qualified Applicator's License

RPF: Registered Professional Forester

SPR: Standard Project Requirement

SRA: State Responsibility Area

TPA: Trees per acre

WLPZ: Watercourse and Lake Protection Zone

INTRODUCTION

PROJECT OVERVIEW

The California Vegetation Treatment Program (CalVTP) directs implementation of vegetation treatments to reduce wildfire risk, while protecting natural resources and public property from wildfire. The Program Environmental Impact Report (PEIR) for the CalVTP was developed in 2019, under the direction of CEQA lead agency, California Board of Forestry and Fire Protection, in accordance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines.

This PSA is prepared to assess treatment areas planned for the approximately 831-acre Shelterwood property, located in Sonoma County near Cazadero.

CEQA LEAD AGENCY AND PROPOSED PROJECT

Sonoma Resource Conservation District (SRCD) will function as the lead agency and the project proponent for this CalVTP. The project proponent is solely responsible for the prescription of all vegetation treatments proposed, including their implementation. The lead agency will be responsible for monitoring the vegetation treatments, mitigation measures, and SPRs shown in Attachment A. The Lead Agency is also responsible for making the final determination regarding this proposed projects CEQA compliance.

The following PSA, and corresponding attachments, were prepared by Frontier Resource Management, LLC. The treatment activities and treatment types were selected by the project proponent for inclusion in this PSA. Frontier Resource Management does not make the determination that the proposed treatment activities are within the scope of the PEIR, but rather provides the evaluation, surveys, and documentation required by CEQA for consideration by the lead agency. The Sonoma Resource Conservation District is responsible for determining if the proposed treatments are within the scope of the PEIR, based on the information contained in this PSA and supporting Attachments.

The treatment types being proposed are fuel breaks and ecological restoration. The treatment activities proposed for use by the project proponent include manual treatment, mechanical treatment, herbicide treatment, prescribed burning, and prescribed herbivory. Ongoing maintenance will involve the same treatment types as the initial treatments.

STATEMENT OF PURPOSE

This document serves as the PSA to determine if the project as proposed is within the scope of the CalVTP PEIR. Less than 10% of the ranch falls outside of the “treatable landscape” or geographic extent of the PEIR. This area is comprised of a few small grassland openings as well as some mixed conifer forest areas, which appear to have been mapped incorrectly during the preparation of the PEIR. The CalVTP Treatable Landscape boundary was digitally developed at a large scale, which did not allow for high resolution mapping. As a result, areas were omitted, even though the vegetation is very similar to the surrounding vegetation within the treatable landscapes. These areas need treatment, as they provide fuel ignition and transfer fire to the “treatable landscapes”.

Due to the similarities of the areas outside of the treatable landscape, the environmental analysis in the PEIR is applicable. An addendum to an EIR is appropriate when a previously certified EIR has been prepared and some changes or revisions to the project are proposed, or the circumstances surrounding the project have changed, but none of the changes or revisions would result in a substantially more severe significant environmental impact, consistent with CEQA section 21166 and CEQA Guidelines Sections 15162, 15163, 15164, and 15168. In this case there are no revisions, only a change to the geographic extent represented by the PEIR.

This PSA and Addendum to the CalVTP PEIR provides CEQA compliance for the proposed vegetation treatments. The MMRP, which identifies the SPRs and MMs applicable to the project, is in Attachment A. Attachment B contains the biological assessment, including a botany report. Attachment C includes all project maps. Attachment D contains the confidential archaeology report prepared by ALTA Archaeological consulting and has been removed to preserve confidentiality.

VEGETATION TREATMENT PLAN

The 831-acre property is situated roughly 3.5 air miles northeast of the town of Cazadero, in Sonoma County. The project area is within the Bearpen Creek watershed, which delivers into Austin creek and eventually the Russian River. The elevation ranges between 400 – 2,040 ft above sea level.

See the Shelterwood Forest Management Plan for a description of forest types, current conditions, management goals, and treatment specifications by forest type.

TREATMENT TYPES

The following treatment types are proposed to achieve the forest management plan goals: Fuel breaks and ecological restoration (see Treatment Types Map in Attachment C). The treatment activities will include mechanical, manual, herbicide application, prescribed burning (Broadcast and Pile), and prescribed herbivory.

Fuel Breaks:
Shaded Fuel Breaks will be created approximately 100 feet on both sides of trails, roads, and ridgelines. These treatments will provide staging areas to support fire-fighting and will provide control lines during prescribed fire activity. Shaded fuel-breaks will be developed and maintained within 100 ft of all roads and structures. Most of the understory vegetation will be removed, while retaining a high degree of canopy cover to slow the brush regeneration. Up to 75% of existing ground fuels, shrubs, and trees < 6" DBH will be removed, chipped, or burned. If the fuel break is comprised of a young stand predominantly under 12" DBH, trees will be retained as described above in the treatment specifications. Retained trees may be limbed of all lower branches, generally to a height of 10 feet but prescriptions may vary depending on the RPF prescription. Once cut, all vegetation will be chipped, burned (piled or broadcast), or lopped and scattered.

Herbicides may be used within these areas where necessary to prevent invasive and resprouting species. This will ensure the fuel break is maintained. A PCA shall be consulted prior to any herbicide application. *All herbicide use shall comply with SPR HAZ-5 , HAZ-6, HAZ-7, HAZ-8, and HAZ-9 as shown in Attachment A*. Snags may be removed unless, it has been determined by an RPF or biologist to be critical habitat for a listed species. If so, CDFW will be consulted prior to snag removal.

Ecological Restoration:
Ecological restoration treatments are designed to restore an ecosystem to a historical state. These conditions vary depending on the degree and extent of disturbance the ecosystem is adapted to. Due to historic timber harvest, clearance for grazing, and fire-exclusion from California's fire-adapted forests over the last 2 centuries, the forest has become overgrown with small unhealthy trees. Some areas which historically were dominated by true oak species have been encroached upon by competing woody species such as Douglas-fir or manzanita (Arctostaphylos spp.), these oak woodlands will be restored to historic ecological conditions. Restoration activities will focus on reducing densities of trees, shrubs, and invasive species. The treatments will modify existing fuels by either changing their spatial orientation or chipping/masticating/burning to reduce potential flame intensity. Mechanical treatments may mimic fire by targeting excessive hazardous fuel loads and ladder fuels, as well as undesirable or non-fire resilient species. By removing vegetation in this way, trees and grassland will be allowed to re-establish in ways that mimic a historical state, or otherwise meet ecological stewardship goals. Reforestation and tree planting may occur throughout the project area. The planting density and species will be determined by the Forester based on site specific conditions.

Prescribed herbivory, manual, mechanical, and prescribed burning treatments may be utilized throughout the project area. Treatments in these areas will be focused on removing ground and ladder fuels that threaten the larger trees and overall canopy health. The main goal in these areas (see Attachment C) is to return the stands to a historical stocking level. Treatments will vary by forest type. See the Shelterwood CFMP for the treatment specifications by stand type. Snags and LWD will be retained within this treatment area, unless they pose a threat to public safety.

TREATMENT ACTIVITIES

- *<u>For all treatment activities:</u> The project proponent is responsible for prescribing and implementing these treatment activities including the mitigations and monitoring described in this PSA and Attachment A.*

<u>Mechanical Treatments</u>
The Shelterwood Collective property is generally very steep, resulting in most areas being inaccessible by heavy equipment. Approximately 199 acres are proposed to be treated with heavy equipment. See Attachment C maps. During field reconnaissance, the RPF determined which areas would be best suited for mechanical treatment based on environmental conditions. Slope, unstable areas, sensitive species habitat, WLPZs, and vegetation density were among the factors considered during the assessment. Mechanical treatments will occur within these mapped areas as well as along existing roads; vegetation may be mechanically treated, outside of mapped areas, if it can be reached with the machine's arm, while the tracks or wheels are within a road or skid trail surface.

During mechanical treatments 1-2 pieces of heavy equipment (both tracked and rubber tired) shall be used to cut, uproot, crush/compact, or chop trees and brush. This will entail utilizing a mastication head to roughly chip target vegetation and disperse onsite. Uprooting will not occur within the ecological restoration areas but may occur occasionally within the fuels break treatments. The types of equipment used to complete these treatments will include excavators, skid steers, feller bunchers, tracked chippers, etc. Mechanical treatments remain the most effective way to achieve the project goals while minimizing risk to human life and property.

- *Mechanical treatments have the potential to ignite brush and debris during periods of high ambient temperature, low relative humidity, and high winds. When these conditions exist, it is poor practice to conduct these types of treatments. The project proponent is responsible for ensuring that all contractors are following the applicable SPRs in Attachment A to mitigate this potential hazard.*

<u>Manual Treatments</u>
Manual treatments may be utilized on all 831 acres. These treatments may involve between 5-20 laborers utilizing chainsaws, pole saws, tracked, and tow behind chippers. Cut material will be either lopped n scattered, chipped, or piled and burned in accordance with the treatment specifications above. Lop n scatter shall not occur within 150 ft of a habitable structure. Tree planting may occur at the Forester's discretion. Depending on feasibility, some burn piles may be extinguished prior to full consumption of woody biomass to produce biochar. Biochar is intended to remain on the property and may be scattered back throughout the forest, it shall not be sold either as a stand-alone product or as an amendment to soil without an appropriate harvest permit issued by CALFIRE.

<u>Prescribed Burning Treatments</u>
- *Frontier Resource Management, LLC (FRM) does <u>not</u> recommend this method of treatment be utilized by untrained individuals to accomplish the forest management goals outlined in this document. FRM is only assessing the potential environmental effects from all potential treatments on the various forest resources present, based on the PEIR completed by the BOF in 2019. FRM is not prescribing or recommending any specific treatment method to achieve the forest management goals. The project proponent is not condoning the use of fire on this property without the written consent and approved burn plan of the Sonoma Resource Conservation District (SRCD). The SRCD and landowners may enter into an agreement with CALFIRE or another agency to develop an agreement in writing determining who is assuming responsibility for operations, and subsequent liability.*

As per the CalVTP PEIR, prescribed burning may be used on all 831 acres to reduce the surface and ladder fuel continuity. The intensity of this treatment may vary depending on many factors. Slope, weather, and fuel load will influence the outcome of this treatment activity. No broadcast burning shall occur until a burn plan is developed (see Attachment A; SPR AQ-2 and SPR AQ-3). Prescribed burning during the initial treatments has the potential to occur at higher intensities, thus with greater risk to the environment and surrounding community; this is due to the current high fuel loading existing throughout the treatment area. Mechanical and maintenance treatments may be used to reduce initial fuels loads, prior to initiating burning.

A loader, excavator, dozer, or skidder may be utilized to construct fire lines where hand lines are not sufficient and where mechanical treatment activities are permitted. The burn plan should outline the equipment utilized in further detail.

Herbicide Treatments

Herbicides may be applied throughout the entirety of the proposed project, except within the unstable area STZ's. See Attachment C, maps. Prior to herbicide application, a PCA will prepare a recommendation for the treatment areas. Application of an herbicide, immediately following initial treatments will reduce the extreme regrowth of the understory (particularly within the fuel break treatments). Without control, brush and other understory species will regrow rapidly and pose a secondary threat to fuel break and WUI infrastructure.
All herbicide use shall comply with SPR HAZ-5 , HAZ-6, HAZ-7, HAZ-8, and HAZ-9 as shown in Attachment A.

Prescribed Herbivory

Targeted grazing of brush and understory may occur throughout the entirety of the proposed project, except within the unstable area STZ's or biological STZs. See Attachment C, maps. All tree and shrub grazing shall follow the limitations defined in Attachment A SPRs. This treatment activity may entail 200 goats/sheep. Grazing is highly effective at reducing ladder fuels and will be utilized surrounding fuel breaks and within ecological restoration areas.

CalVTP PROJECT INFORMATION

1. **Project Title:** Shelterwood Bearpen CalVTP
2. **Project Proponent Name and Address:**

   Sonoma County Resource Conservation District

   1221 Farmers Ln Ste F

   Santa Rosa, CA 95405
3. **Contact Person Information and Phone Number:** Jason Wells, (707) 569-1448
4. **Project Location:** Northwest of Cazadero, CA, within Sonoma County

   The project is proposed throughout the entirety of the Shelterwood Collective property which includes parcels 107-030-014, 107-030-015, 107-050-001, & 109-330-010. The boundary falls within portions of sections 25, 26, 35, & 36 T09N, R12W MDBM, Fort Ross USGS 7.5 Minute Quadrangle.

5. **Total Area to be Treated (acres)** 831 Acres.
6. **Description of Project**:
   a. **Initial Treatment**

      ❖ *See Vegetation Treatment Plan above. Treatment goals and specifications are included in the Shelterwood Forest Management Plan.*

Treatment Types

☐ Wildland-Urban Interface Fuel Reduction

☒ Fuel Break

☒ Ecological Restoration

Treatment Activities

☒ Prescribed Burning (Broadcast), **831** acres

☒ Prescribed Burning (Pile Burning) **831** acres

☒ Mechanical Treatment, **199** acres

☒ Manual Treatment, **831** acres

☒ Prescribed Herbivory, **831** acres

☒ Herbicide Application, **831** acres

Note: Multiple treatment activities may be applied in the same area to achieve the treatment specifications

Fuel Type [*see description in CalVTP PEIR Section 2.4.1, check every applicable category; provide detail in description of Initial Treatment*]

☒ Grass Fuel Type

☒ Shrub Fuel Type

☒ Tree Fuel Type

b. Treatment Maintenance

- *Estimated treatment maintenance is based on each initial treatment completed. It is not anticipated that the initial treatment shall be completed on the entire project within 5 years of project approval.*
- *Treatment maintenance timing and scope will vary depending on the level of understory regrowth in response to initial treatments, which is highly dependent on-site quality, water availability, soils, aspect, initial treatment intensity, use of herbicides, etc…*

Fuel Break Maintenance:

Treatments within the Fuel Break areas will reoccur every 2-10 years depending on the effectiveness of the initial treatments and the degree of regeneration. It is anticipated that vegetation will regrow quickly within the fuel breaks due to the greater disturbance associated with these types of treatments. A high canopy closure along with herbicide use will slow understory re-initiation. If herbicides aren't utilized, it is highly likely the fuel breaks will require retreatment after roughly 3 years. Alternatively, if herbicides are applied to target vegetation within the fuel break (i.e. vigorously resprouting and/or invasive species) maintenance treatments may not be necessary for 10+ years.

Ecological Restoration Maintenance:

The goal within these treatment types will vary by forest type as described in the Cooperative Forest Management Plan. It is estimated that treatment maintenance shall occur every 10-20 years, focusing mainly on treating dead and down. Again, the maintenance period will depend on the vegetation response to treatment.

- *For maintenance of all treatment types: An assessment will be made by the project proponent which will determine when maintenance treatments shall occur. This will be based on regeneration and fuel loading assessments.*

Treatment Types *[see description in CalVTP PEIR Section 2.5.1, check every applicable category; provide detail in description of Treatment Maintenance*]

☐ Wildland-Urban Interface Fuel Reduction

☒ Fuel Break

☒ Ecological Restoration

Treatment Activities [*see description in CalVTP PEIR Section 2.5.2, check every applicable category; include number of acres subject to each treatment activity, provide detail in description of Treatment Maintenance*]

☒ Prescribed Burning (Broadcast), **831** acres

☒ Prescribed Burning (Pile Burning) **831** acres

☒ Mechanical Treatment, **199** acres

☒ Manual Treatment, **831** acres

☒ Prescribed Herbivory, **831** acres

☒ Herbicide Application, **831** acres

Fuel Type [*see description in CalVTP PEIR Section 2.4.1, check every applicable category; provide detail in description of Treatment Maintenance*]

☒ Grass Fuel Type

☒ Shrub Fuel Type

☒ Tree Fuel Type

Use of the PSA for Treatment Maintenance

Prior to implementing a maintenance treatment, the project proponent will verify that the expected site conditions as described in the PSA are present in the treatment area. As time passes, the continued relevance of the PSA will be considered by the project proponent in light of potentially changed conditions or circumstances. When the project proponent determines the PSA is no longer sufficiently relevant, an assessment will made to determine whether a new PSA or other environmental analysis is warranted.

In addition to verifying that the PSA continues to provide relevant CEQA coverage for treatment maintenance, the project proponent will update the PSA at the time a maintenance treatment is needed when more than 10 years have passed since the approval of the PSA or the latest PSA update. For example, the project proponent may conduct a reconnaissance survey to verify conditions are substantially similar to those anticipated in the PSA. Updated information will be documented.

7. **Regional Setting and Surrounding Land Uses:** The project area is within Sonoma County near the town of Cazadero. The property is privately owned and managed by Shelterwood Collective, a non-profit group focused on forest restoration. The land uses within and adjacent to this property include but are not limited to forest conservation, cattle grazing, hunting, timber harvesting and agricultural production.

8. **Other Public Agencies Whose Approval is Required**: (e.g., permits)

   - Smoke management plan will be prepared for NSCAPCD.
   - Burn Permit will be obtained from CALFIRE.
   - Pesticide application permit through the Sonoma County CAL Ag permit.
   - CALFIRE: Non-industrial Timber Management Plan or Forest Fire Prevention Exemption. Required to harvest timber.

Coastal Act Compliance

☒ The proposed project is NOT within the Coastal Zone

☐ The proposed project is within the Coastal Zone (*check one of the following boxes*)

☐ A coastal development permit been applied for or obtained from the local Coastal Commission district office or local government with a certified Local Coastal Plan, as applicable

☐ The local Coastal Commission district office or local government with a certified Local Coastal Plan (in consultation with the local Coastal Commission district office) has determined that a coastal development permit is not required

9. **Native American Consultation**. *For treatment projects that are within the scope of the CalVTP PEIR, AB 52 consultation for AB 52 compliance has been completed. The Board of Forestry and Fire Protection conducted consultation pursuant to Public Resources Code section 21080.3.1 during preparation of the PEIR*. Pursuant to CalVTP SPR CUL-2, Native American tribes were contacted on December 6th, 2022, by ALTA Archaeological Consulting. Results of these consultations are included in Attachment D which is maintained as a confidential document.

DETERMINATION (To be completed by the project proponent)

On the basis of this PSA and the substantial evidence supporting it:

☒ I find that all of the effects of the proposed project (a) have been covered in the CalVTP PEIR, and (b) all applicable Standard Project Requirements and mitigation measures identified in the CalVTP PEIR will be implemented. The proposed project is, therefore, **WITHIN THE SCOPE** of the CalVTP PEIR. NO ADDITIONAL CEQA DOCUMENTATION is required.

☒ I find that treatments in proposed project areas outside the CalVTP treatable landscape do not result in substantial changes in the project, no substantial changes in circumstances have occurred, and no new information of substantial importance has been identified. The inclusion of project areas outside the CalVTP treatable landscape will not result in any new or substantially more severe significant impacts. None of the conditions described in State CEQA Guidelines Section 15162 calling for preparation of a subsequent EIR have occurred; therefore, this **ADDENDUM** is adopted to address the project areas outside geographic extent presented in the PEIR.

☐ I find that the proposed project will have effects that were not covered in the CalVTP PEIR. These effects are less than significant without any mitigation beyond what is already required pursuant to the CalVTP PEIR. A NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project will have effects that were not covered in the CalVTP PEIR or will have effects that are substantially more severe than those covered in the CalVTP PEIR. Although these effects may be significant in the absence of additional mitigation beyond the CalVTP PEIR's measures, revisions to the proposed project or additional mitigation measures have been agreed to by the project proponent that would avoid or reduce the effects so that clearly no significant effects would occur. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project will have significant environmental effects that are (a) new and were not covered in the CalVTP PEIR and/or (b) substantially more severe than those covered in the CalVTP PEIR. Because one or more effects may be significant and cannot be clearly mitigated to less than significant, an ENVIRONMENTAL IMPACT REPORT will be prepared.

John Nagle — Signature

9.29.2023 — Date

John Nagle — Printed Name

9.29.2023 BOARD CHAIR — Title

SONOMA RESOURCE CONSERVATION DISTRICT — Agency

PROJECT SPECIFIC ANALYSIS/ADDENDUM

AESTHETICS AND VISUAL RESOURCES

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact AES-1: Result in Short-Term, Substantial Degradation of a Scenic Vista or Visual Character or Quality of Public Views, or Damage to Scenic Resources in a State Scenic Highway from Treatment Activities	LTS	Impact AES-1, pp. 3.2-16 – 3.2-19	No	None	NA	None	NA	NA
Impact AES-2: Result in Long-Term, Substantial Degradation of a Scenic Vista or Visual Character or Quality of Public Views, or Damage to Scenic Resources in a State Scenic Highway from WUI Fuel Reduction, Ecological Restoration, or Shaded Fuel Break Treatment Types	LTS	Impact AES-2, pp. 3.2-20 – 3.2-25	No	None	NA	None	NA	NA
Impact AES-3: Result in Long-Term Substantial Degradation of a Scenic Vista or Visual Character or Quality of Public Views, or Damage to Scenic Resources in a State Scenic Highway from the Non-Shaded Fuel Break Treatment Type	PS	Impact AES-3, pp. 3.2-25 – 3.2-27	No	NA	None	NA	NA	NA

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; SU: Significant and unavoidable. PS: Potentially Significant

New Aesthetic and Visual Resource Impacts: Would the treatment result in other impacts to aesthetics and visual resources that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
	☐	☐	☐

Discussion

Impact AES-1
The project area is not within view of a public scenic vista or scenic highway.

Impact AES-2
The project area is not within view of a public scenic vista or scenic highway.

Impact AES-3
The project area is not within view of a public scenic vista or scenic highway.

CalVTP Addendum for Change to Geographic Extent
The project proponent has determined that the inclusion of land in the proposed treatment area that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, the viewshed and treatment impacts are consistent with those examined in the PEIR and would therefore not create any new impacts.

PD-3.2: AGRICULTURE AND FORESTRY RESOURCES

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact AG-1: Directly Result in the Loss of Forest Land or Conversion of Forest Land to a Non-Forest Use or Involve Other Changes in the Existing Environment Which, Due to Their Location or Nature, Could Result in Conversion of Forest Land to Non-Forest Use	LTS	Impact AG-1, pp. 3.3-7 – 3.3-8	Yes	NA	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; SU: Significant and unavoidable. PS: Potentially Significant

New Agriculture and Forestry Resource Impacts: Would the treatment result in other impacts to agriculture and forestry resources that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact AG-1
Initial and maintenance treatments will encourage a healthier forest condition by removing competing vegetation and in some cases scarifying the ground, allowing for desirable tree species to seed in. The project area exists within various forest types. The project will generally focus on removing trees less than 10" DBH, and brush species, which will not have a significant negative effect on the forest structure. Not all trees in this size class will be removed, thus preventing a future conversion. See the Forest Management Plan treatment specifications for more details.

The treatments proposed will protect this forest from a stand replacing wildfire, which would have the potential to convert the forest land into a brush dominated and/or pioneer species structure. This would have the potential to initiate a cycle of high intensity wildfires which could create an adaptation towards chapparal species.

The treatments as proposed with this CalVTP and specified in the FMP will protect these forest types from conversion through ecological restoration and progression towards the natural fire-regime.

CalVTP Addendum: Change to Geographic Extent
The inclusion of land that is outside the CalVTP treatable landscape constitutes a change to the geographic extent presented in the PEIR. However, the composition of forestland as defined in public resources code section 12220(g) is the same within and outside the treatable landscapes of this specific project area. The forest types which fall outside of the treatable landscapes are comprised mostly of oak woodlands, mixed conifer with small grassland openings (< 3 acres) intermixed. The reason for their omission is most likely due to low resolution mapping performed on a large scale. This mapping approach failed to include all forestland needing treatment. There is no change in the impact to forest resources within these areas.

PD-3.3: AIR QUALITY

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact AQ-1: Generate Emissions of Criteria Air Pollutants and Precursors During Treatment Activities that would exceed CAAQS or NAAQS	PSU	Table 3.4-1; Impact AQ-1, pp. 3.4-26 – 3.4-32; Appendix AQ-1	Yes	AD-4, AQ-1-AQ-4, AQ-6	AQ-1 See exclusions in discussion	PSU	No	Yes
Impact AQ-2: Expose People to Diesel Particulate Matter Emissions and Related Health Risk	LTS	Table 3.4-6; Impact AQ-2 pp. 3.4-33 – 3.4-34; Appendix AQ-1	Yes	HAZ-1, NOI-4, NOI-5	NA	LTS	No	Yes
Impact AQ-3: Expose People to Fugitive Dust Emissions Containing Naturally Occurring Asbestos and Related Health Risk	LTS	Section 3.4.2; Impact AQ-3, pp. 3.4-34 – 3.4-35	No	None	NA	NA	NA	NA
Impact AQ-4: Expose People to Toxic Air Contaminants Emitted by Prescribed Burns and Related Health Risk	PSU	Section 3.4.2; Impact AQ-4, pp. 3.4-35 – 3.4-37	Yes	AD-4, AQ-2, AQ-3, AQ-6	NA	PSU	No	Yes
Impact AQ-5: Expose People to Objectionable Odors from Diesel Exhaust	LTS	Impact AQ-5, pp. 3.4-37 – 3.4-38	Yes	HAZ-1, NOI-4, NOI-5	NA	LTS	No	Yes
Impact AQ-6: Expose People to Objectionable Odors from Smoke During Prescribed Burning	PSU	Section 2.5.2; Impact AQ-6; pp. 3.4-38	Yes	AD-4, AQ-2, AQ-3, AQ-6	NA	PSU	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; PSU: Potentially Significant and unavoidable. PS: Potentially Significant

New Air Quality Impacts: Would the treatment result in other impacts to air quality that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact AQ-1
Emissions of criteria air pollutants related to the proposed treatment are within the scope of the PEIR because the associated equipment and duration of use are consistent with those analyzed in the PEIR. The applicable SPRs will be implemented during treatments. AQ-5 would not apply to this project because there are no known asbestos areas within the treatment units.

The overall impact was determined to be Potentially significant and un-avoidable by the PEIR. Mitigation measure AQ-1 will be applied where feasible and will, along with the SPRs, reduce the impact. The following mitigation measures listed under AQ-1 will not be applied due to lack in technology and infeasibility at the local level:

- Electric and gasoline-powered equipment will be substituted for diesel-powered equipment.
    - *Currently there are no alternatives available which offer the functional ability to handle the workload required for the treatment activities. Diesel engines are the most efficient and widely available option for completing fuels treatments, particularly with regards to mechanical treatment activities. Furthermore, gasoline engines lack the torque required to complete treatments on steep slopes under extreme loads. This is where Diesel engines have an advantage, allowing treatment on areas which would otherwise be untreatable. Diesel powered equipment also has a greater workload ability, allowing work to be completed faster. This has both an economic impact to the project as well as a reduced duration of air quality offense.*

      Lithium-ion batteries lack the range and charging speed to allow "theoretical" electric powered heavy equipment to complete the job within any sort of real-world efficiency. Because the jobs are so far from any charging station, it would be necessary to have a mobile charging source or require transporting batteries to remote mountainous locations. That charging source would likely require a gas-powered generator to work, thus defeating the purpose of the mitigation measure.

      Ultimately, the technology is lacking, both locally and elsewhere, to include this mitigation measure.

Impact AQ-2
Use of mechanical equipment during initial and maintenance treatments could expose people to diesel particulate matter emissions. This potential was examined within the PEIR. These types of emissions for the treatment activities are within the scope of the PEIR because they are the same, including types of equipment and potential duration of treatment.

Impact AQ-3
NA: No naturally occurring asbestos is mapped in the treatment area.

Impact AQ-4
Prescribed burning during initial and maintenance treatments could expose people to toxic air contaminants, which was examined in the PEIR. The duration and parameters of prescribed burns are the same as addressed in the PEIR, therefore the potential exposures are within the scope of the PEIR. All feasible SPRs for controlling smoke emissions are included in this PSA as well as the PEIR and no further mitigations are feasible. The impacts remain significant and unavoidable as identified in the PEIR. Nevertheless, these impacts are significantly less than those created during large scale wildfires. The goal of these burns being to prevent devastating large-scale wildfires, and thus large scale impacts to air quality.

Impact AQ-5
The use of diesel equipment during operations could expose people to objectionable odors. This potential was examined in the PEIR. The potential impact from this project is within the scope because the duration, equipment used, and treatment activities are consistent with those analyzed in the PEIR. Furthermore, the project area is remote enough that exposure to people who would object to the odor (which would be a ridiculous reason to not carry out the treatments) is limited to the few neighboring properties. Since these properties are owned by rural landowners, they are accustomed to these types of treatments.

Impact AQ-6
Prescribed burning during initial and maintenance treatments could expose people to objectionable odors. This potential was examined in the PEIR. The potential impact from this project is within the scope because the duration, equipment used, and treatment activities are consistent with those analyzed in the PEIR. Also, the odors associated with small scale low intensity prescribed fires are far less offensive than large scale high intensity wildfires, which these treatments are aimed at preventing.

CalVTP Addendum: Change to Geographic Extent
The inclusion of land that is outside of the treatable landscape presented in the PEIR, constitutes a change in the geographic extent presented in the PEIR. The air quality conditions, regulations, and exposure potential present in these areas are the same as those within the treatable landscape. Consequently, the impact will be the same and is within the scope of this PEIR for all of the above listed impacts.

PD-3.4: ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact CUL-1: Cause a Substantial Adverse Change in the Significance of Built Historical Resources	LTS	Impact CUL-1, pp. 3.5-14 – 3.5-15	Yes	CUL-1, CUL-7, CUL-8	NA	LTS	No	Yes
Impact CUL-2: Cause a Substantial Adverse Change in the Significance of Unique Archaeological Resources or Subsurface Historical Resources	SU	Impact CUL-2, pp. 3.5-15 – 3.5-16	Yes	CUL-1 through CUL-5, CUL-8	CUL-2	LTSM	No	Yes
Impact CUL-3: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource	LTS	Impact CUL-3, p. 3.5-17	Yes	CUL-1 through CUL-6, and CUL-8	NA	LTS	No	Yes
Impact CUL-4: Disturb Human Remains	LTS	Impact CUL-4, p. 3.5-18	Yes	NA	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; LTSM: Less than significant with mitigation; PSU: Potentially Significant and unavoidable; PS: Potentially Significant

New Archaeological, Historical, and Tribal Cultural Resource Impacts: Would the treatment result in other impacts to archaeological, historical, and tribal cultural resources that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

ALTA Archaeological consulting conducted a survey and report to satisfy CEQA requirements regarding historical and prehistorical resources. Attachment D, which addresses site specific findings and protection measures is maintained as a confidential document.

Impact CUL-1

The proposed treatments have the potential to damage historical resources and this has been assessed in the PEIR. The impact of this project is within the scope of the PEIR because the treatment activities are the same and the impact will be less than significant with the inclusion of the SPRs. All results of cultural resource surveys are kept confidential by the project proponent.

Impact CUL-2
Vegetation treatments include mechanical treatments that could disturb the ground, potentially resulting in damage to unknown archaeological resources. An NWIC Records search and Archaeologist survey have been conducted and the results are kept in a confidential document. Potential for these activities to result in further undiscovered historic resources was examined in the PEIR. The impact of this project was determined to be the same as the PEIR because the treatment activities are the same and the potential resources are the same. As per Mitigation Measure CUL-2, any archaeological resource discovered during treatments will be given 100 ft avoidance, and the site will be reviewed by an archaeologist.

Impact CUL-3
This impact was assessed in the PEIR and with the inclusion of the SPRs listed, the impact will be less than significant. Results of these SPRs are kept confidential by the project proponent.

Impact CUL-4
There is a potential for treatment activities to uncover human remains due to the nature of the treatment activities. The potential for treatment activities to uncover human remains was examined in the PEIR. This project's potential impact is within the scope of the PEIR because the intensity of ground disturbance, the equipment used, and the duration of their use is the same as those analyzed in the PEIR.

New Archaeological, Historical, and Tribal Cultural Resource Impacts
The inclusion of land that is outside of the treatable landscapes constitutes a change to the geographic extent of the PEIR. However, the potential archaeological resources and the environmental conditions are consistent throughout the treatment area, both inside of the treatable landscapes and outside. Furthermore, this area outside of the treatable landscape was included in the archaeologist survey and report.

PD-3.5: BIOLOGICAL RESOURCES

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact BIO-1: Substantially Affect Special-Status Plant Species Either Directly or Through Habitat Modifications	PS	Impact BIO-1, pp 3.6-131–3.6.138	Yes	BIO-1, BIO-2, BIO-3, BIO-7, BIO-9, GEO-1, GEO-3, GEO-4, GEO-5, GEO-7, HYD-4	Depends on results of Botany survey. See Botany report located in Attachment B	LTSM	No	Yes
Impact BIO-2: Substantially Affect Special-Status Wildlife Species Either Directly or Through Habitat Modifications	LTS (all wildlife species except bumble bees) S&U (bumble bees)	Impact BIO-2, pp 3.6-138–3.6-184	Yes	BIO-1, BIO-2, BIO-9, BIO-10, GEO-1, HYD-4, GEO-2, GEO-3	MM BIO - 2a *Assume presence for NSO at mapped AC location: See Bio STZ in Attachment C maps; See discussion below for project mitigations*	LTSM	No	Yes
Impact BIO-3: Substantially Affect Riparian Habitat or Other Sensitive Natural Community Through Direct Loss or Degradation that Leads to Loss of Habitat Function	LTS	Impact BIO-3, pp 3.6-186–3.6-191	Yes	BIO-1, BIO-2, BIO-3, BIO-4, BIO-6, BIO-9, HYD-4	NA	LTS	No	Yes
Impact BIO-4: Substantially Affect State or Federally Protected Wetlands	LTS	Impact BIO-4, pp 3.6-191–3.6-192	Yes	BIO-1, BIO-2, BIO-4 HYD-4	None	LTS	No	Yes
Impact BIO-5: Interfere Substantially with Wildlife Movement Corridors or Impede Use of Nurseries	LTS	Impact BIO-5, pp 3.6-192–3.6-196	Yes	BIO-1, BIO-2, BIO-4 HYD-4	None	LTS	No	Yes

Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact BIO-6: Substantially Reduce Habitat or Abundance of Common Wildlife	LTS	Impact BIO-6, pp 3.6-197–3.6-198	No	None	NA	NA	NA	Yes
Impact BIO-7: Conflict with Local Policies or Ordinances Protecting Biological Resources	No Impact	Impact BIO-7, pp 3.6-198–3.6-199	No	None	NA	NA	NA	NA
Impact BIO-8: Conflict with the Provisions of an Adopted Natural Community Conservation Plan, Habitat Conservation Plan, or Other Approved Habitat Plan	No Impact	Impact BIO-8, pp 3.6-199–3.6-200	No	None	NA	NA	NA	NA

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; LTSM: Less than significant with mitigation; PSU: Potentially Significant and unavoidable; PS: Potentially Significant

New Biological Resources Impacts: Would the treatment result in other impacts to biological resources that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Pursuant to SPR BIO-1, an RPF from FRM conducted a data review of project-specific biological resources and a reconnaissance-level survey of the treatment areas. The main goal of these surveys was to determine the habitat suitability of the project area for the special status species identified during the data review.

Attachment B includes a comprehensive list of all special status species with potential to occur within the project area based on the SPR Bio-1 requirement for a data review of biological resources. It includes the results of a 9-quad search of the California Natural Diversity Database (CNDDB) and the California Native Plant Society Inventory of Rare and Endangered Plants of California. Appendix Bio-3 (Table 13a, Table 13b, and Table 19) of the PEIR (Volume II) was reviewed for special-status plants and wildlife that could occur within the treatment areas. Species Occurrence data was reviewed for 9 quads surrounding the project area and species determined to have a high potential for occurrence, based on project specific habitat, were included in the list of potential species.

Frontier Resource Management conducted reconnaissance-level surveys throughout 2022-2023, to identify and document sensitive resources within the treatment areas. This included aquatic habitat, riparian habitat, and sensitive natural communities. During these surveys, habitat suitability determinations were made for the potential special-status plant and wildlife species listed in Attachment B. Below are the final lists of special-status plant and wildlife species with a moderate to high potential of occurring within the treatment area. Some species included in Attachment B were ruled out due to lack of habitat or lack of threat from project activities.

Impact BIO-1
Initial and maintenance treatments could result in direct or indirect adverse effects to the special status plants species with potential to occur within the treatment areas. See Attachment B for the full analysis.

During data review and reconnaissance level surveys, it was determined that BIO-7, a seasonally specific floristic survey would be conducted to avoid "take" of potentially listed species within the project area. Through the scoping process, a target list of 18 species was identified based on habitat requirements and potential project impacts. There were no additional listed or non-listed special status species located during the botanical surveys. Methuselah's beard lichen was identified during the previous botany survey (in support of the 2003 THP) throughout a small area in the southwestern portion of the property. See botanical report in Attachment B for the full analysis and report.

The treatment activities and their potential for adverse effects on special-status species is within the scope of the PEIR. With the included mitigation measures and SPRs, the impacts will be reduced to a less than significant level.

Special Status Plant Species to include for SPR BIO-2 trainings

Baker's Manzanita *(Arctostaphylos bakeri ssp. Bakeri)*
Status: California Rare
This species is listed as a strict endemic species for ultramafic soils. Because of this there is a very low possibility it would exist at the shelterwood property, due to the lack of ultramafic soils. Nevertheless, in lieu of conducting an early season blooming survey, the project proponent will protect all manzanita with a characteristically small leaf. Manzanita with leaves less than or equal to 1/2" shall be retained were feasible.

Methuselah's beard lichen *(Usnea longissimi):*
Rare plant rank 4.2.
The 2003 THP identified this species within the southwest of the property to the east of Mohrhardt ridge. This species is known to reproduce by windblown fragments. The protection for this species will be the same as identified in the previous THP. This will be achieved through the preservation of major populations of usnea longissimi on any host trees "seed trees". Host trees are defined as trees with visible hanging pendulous lichens on 40% of the branches.

Because few large trees are proposed for removal within the ecological restoration treatment, it is not anticipated this species will be impacted by the proposed treatments. Workers will be trained on the identification of this species and the previously mapped location, to avoid any host trees discovered, as defined above.

Impact BIO-2
Treatment activities could result in direct or indirect adverse effects to special status wildlife species with suitable habitat within the treatment area. See Attachment B for an analysis of all species with the potential to occur (CNDDB 9 quad search results were considered). Those species with moderate to high potential for occurrence, or which occur within 3 miles of the project area, have been included in the list below. With the implementation of the SPR's and mitigation measures listed in the table above, the potential impacts will be less than significant.

The following species will be included in SPR BIO-2 training for workers. If one of these species is discovered during work activities, the RPF or qualified biologist will be notified and protection measures will be developed depending on the species, and time of year (i.e. nesting or critical breeding season).

Special-Status Wildlife Species to Include for SPR BIO-2 Trainings

Birds

Northern Spotted Owl (*Strix occidentalis caurina*)
Status: Federally Threatened; California Threatened
Habitat Requirements: Northern spotted owls (NSO) are old growth to second growth forest obligate birds that require permanent water and suitable nesting trees/snags (Zeiner et al. 1990a). Northern spotted owls use dense, old-growth forests, or mid- to late- seral stage forest, with a multi-layered canopy for breeding (Remsen 1978). Northern spotted owl nests are most often found on existing structures (old raptor nest, squirrel nest, red-tree vole nest), or debris piled on a broken topped tree; although, they have been found inside tree cavities.
In evaluating potential NSO habitat, the presence of a nest structure may be more important than the size or species of tree. Successful nest sites have canopy cover immediately above nests exceeding 85%.

The presence of high-quality foraging habitat is also very important. Early seral habitat can provide excellent foraging opportunities for the NSO. Its primary prey in this area is the dusky-footed woodrat (*Neotoma fuscipes*). The NSO breeds from southwestern British Columbia south through western Washington and western Oregon to Marin County, California. The breeding season is between February 1st to July 31st.

Potential for Occurrence: There is one activity center which was identified in 2004 during the 1-03-169 THP. No NSO surveys have been conducted since these detections were originally made. During SPR BIO-1 and BIO-10, reconnaissance and focused surveys (non-protocol level) were conducted throughout the Shelterwood property, in search of NSO during daytime hours. No detections were made. The project proponent shall assume presence of the AC. CDFW was consulted for technical assistance.

CDFW Consultation Results Regarding NSO Protections:
CDFW was contacted for technical support regarding protection of this activity center, as per Mitigation Measure BIO-2a. The project proponent was directed to utilize the U.S Fish and Wildlife document titled "*Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California*", updated October 10, 2020. The guidance provides information for determining the appropriate nest buffer distance based on activities, and their potential increase to the ambient noise level.

Project Specific Mitigation measures for NSO AC (to be implemented around mapped location in Attachment C)**:**

- SPR BIO-2: Require training on identification of NSO to all workers prior to beginning operations. If an NSO is observed during operations, all treatments shall stop within 500 ft of the location and the RPF or Biologist shall be notified.
- MM BIO-2a:
  - Mechanical treatments, manual treatments, and prescribed burning shall require a seasonal no treatment buffer within **500 ft** of the AC shown in Attachment C, between February 1st and July 31st.
  - Prescribed herbivory and herbicide use shall not require a seasonal restriction.

For the full NSO analysis, see Attachment B. These buffer distances are based on equipment being used for each treatment activity. For the unabridged mitigations, see Attachment A.

Marbled murrelet *(Brachyramphus marmoratus)*
Status: Federally Threatened; State Endangered
Potential for Occurrence: Low potential. The project area lacks the high-quality habitat required for this species. There is a patch of ~ 3 acres of old growth trees in the southwest corner of section 36, but the large nesting platforms are generally lacking throughout the area. Also, due to the small size of this area and the lack of cover throughout, the habitat function is very low.
CDFW Consultation Results: CDFW Assessed the habitat potential as well as the potential for impact from the project during a site visit conducted on May 12, 2023. They concluded that the stand does not contain suitable nesting habitat for the marbled murrelet at this time. CDFW made recommendations to retain conifers with large limbs and other habitat values during treatment activities. See Attachment B for the full letter and analysis provided by CDFW.

Mammals

Sonoma Tree Vole (*Arborimus pomo*)
Status: Species of Special Concern
Potential for Occurrence**:** There is a moderate potential for the Sonoma tree vole to exist within the project area. A visual search of the canopy for stick nests and the forest floor for discarded resin ducts, which accumulate below vole nests was conducted. Resin ducts or nests were not observed during reconnaissance surveys.
Mitigations: Workers will be instructed on locating potential Sonoma Tree Vole nest trees. If a stick nest is observed, the forest floor at that location will be inspected for discarded resin ducts. If STV is detected, nest trees and screen trees will be retained were feasible.

North American Porcupine (*Erethizon dorsatum*)
Status: SSC
Potential for Occurrence: There is a moderate potential for this species to occur within the treatment units. No individuals were observed during field reconnaissance. They are commonly found in coniferous and mixed forested areas, but have adapted to harsh environments such as shrublands, tundra, and deserts. They make their dens in hollow trees, decaying logs, and caves in rocky areas. No individuals or their dens were observed during field reconnaissance and the closest known occurrence is approximately 2.5 miles southwest of the treatment area.
Mitigations: Large downed hollow logs and trees with basal hollows will be retained where feasible. With implementation of SPR-BIO 2 workers will be trained on identification of this species and its dens. If located, work will stop and the RPF or qualified biologist will be notified to develop protection measures.

Amphibians and Reptiles

California Giant Salamander (*Dicamptodon ensatus*)
Status: SSC
Potential for Occurrence: There is a high potential for this species to exist within the project area near cold permanent and semi-permanent streams and springs. No individuals were observed during field reconnaissance.
Mitigation: SPR HYD-4 requires the establishment of a WLPZ around watercourses and springs. This will ensure protection of individuals and critical habitat from potentially damaging effects of treatments. SPR BIO-2 will require training for workers to identify and avoid this species during treatment.

Foothill Yellow-Legged Frog *(Rana boylii)*
Status: SSC; CDFW determined this species not to be "special status" within the coastal range.
Potential for Occurrence: There is a high potential for this species and habitat to exist within the treatment areas. No individuals were encountered during field reconnaissance, but the closest known occurrence is 1,200 ft east of the project area.
Mitigation: SPR HYD-4 requires the establishment of a WLPZ around watercourses and springs. This will ensure protection of individuals and critical habitat from potentially damaging effects of treatments. Also, SPRs GEO-1, GEO-2, and GEO-3 will prevent ground disturbance during periods of soil saturation, when this species may

wander outside the WLPZ. SPR BIO-2 will require training for workers to identify and avoid this species during treatment within the WLPZ.

Red-Bellied Newt (*Taricha rivularis*)
Status: SSC
Potential for Occurrence: There is a moderate to high potential for individuals to occur within the treatment areas near perennial watercourses and springs. No individuals were encountered during field reconnaissance, but there are known occurrences within 2 miles of the project area.
Mitigation: The watercourse protection measures, particularly SPR HYD-4 will ensure protection of individuals and critical habitat from damaging effects of treatments. Also, SPRs GEO-1, GEO-2, and GEO-3 will prevent ground disturbance during periods of soil saturation, when this species is more likely to be active outside of the WLPZ. SPR BIO-2 will require training for workers to identify and protect this species.

Conclusion

The potential for treatment activities to result in adverse effects on special status species was examined in the PEIR. The impact is within the scope of the PEIR because the treatment activities and intensity are consistent with those analyzed in the PEIR. See Attachment B for the full analysis of potential listed and non-listed species resulting from SPR BIO-1. With the included SPRs and Mitigation measures listed above, the impact to sensitive species will be less than significant.

Impact BIO-3
There is a potential for the treatment activities to impact designated sensitive natural communities. Black and White oak woodlands are present within the project area and have the potential to be impacted by operations. This was analyzed in the PEIR. With the inclusion of the SPRs listed above this impact will be less than significant. The oak woodland ecosystems are not at significant risk due to vegetation removal, because the size class of trees proposed for treatment are generally less than 6" DBH, and the average DBH of oaks in these stands are over 20". These stands will be treated by thinning Douglas-fir, madrone, and bay saplings. Burning could have the potential to negatively impact this sensitive natural community if occurring too frequently or with too high an intensity. This must be avoided by not burning within the ecological restoration treatment types more frequently than the "pre-historical" fire return interval for historical oak woodlands.

According to Fire in California Ecosystems:

> *"In general, the most frequent fire occurred in grasslands and oak woodlands, with decreasing fire frequencies in chaparral, mixed evergreen, and montane mixed conifer. The least frequent fire occurred in moist, coastal conifer forests…*
>
> *Oregon white oak and California Black oak are fire-enhanced, facultative sprouters…*
>
> *Pre-historically, Oregon white oak woodlands experienced frequent, low-intensity surface fires, many of which were ignited by Native Americans. Mean fire return intervals varied from 7 to 13 years in Oregon white oak woodlands in Humboldt County (Sugihara, Wagtendonk, Shaffer, Fites-kaufman, Thode 2006)"*

This sensitive natural community has prescriptions clearly described in the Forest Management Plan to avoid potential type conversion. This will generally entail avoiding burning when there is a high degree of dead and down material that would cause an uncharacteristically high fire intensity. An RPF will assess the fuel load within the oak woodland and determine if mitigations are necessary to prevent excessive tree mortality within this community. If the RPF determines there to be a critically high fuel load – either naturally or due to treatment activities – Mitigation measures will be developed to avoid or lessen impact to a level of insignificance. The mitigation measures shall be developed on a site-specific basis subject to the RPF's professional judgement. These measures to protect desirable residual trees may include but are not limited to the following:

- Avoid burning immediately after mastication treatments within oak woodlands with an uncharacteristically high fuel load. Instead, allow mastication debris to decompose over time.
- Pull back material from around desired retention trees exposing mineral soil and/or the duff layer. The optimal distance of clearance will depend on the individual tree and level of fuel loading.

- Utilize burn piles where fuel loads are extreme prior to broadcast burning. Pile size and density should be kept to a minimum necessary to reduce the site heat load.
- Burning during periods of high fuel moisture to achieve a "dirty burn".
- Consult with experienced, professional fire-use practitioners and fire-fighting professionals to utilize other low intensity burning techniques.

Based on this review, the proposed treatments are not expected to have a negative effect on the oak woodland sensitive natural community or their habitat function. In fact, a beneficial effect is anticipated with the removal of encroaching conifers, bays, and madrones.

All riparian habitats shall be protected with the provisions of HYD-4 and BIO-4, through the establishment of a WLPZ buffer. See BIO-4 regarding treatment specifications for riparian habitats. Treatments within this buffer were designed to protect the biological function of these sensitive communities. All riparian habitats are mapped as springs, wet areas, ponds, and Class I or II watercourses. BIO-4 will be implemented within the slope and Class dependent WLPZ buffer. See Attachment A.

Impact BIO-4
The treatment activities have the potential to negatively impact wetlands and riparian habitats. With the inclusion of the SPR's listed in the table above, this impact will be less than significant. These SPRs include the development of slope dependent, watercourse, and wet area protections. The treatment activities and their potential to impact wetlands were assessed in the PEIR and were found to be less than significant after the inclusion of the SPR's listed. The proposed treatment activities are therefore within the scope of the PEIR, because they are the same as those listed in the PEIR.

Impact BIO-5
The treatment activities could result in direct or indirect adverse effects on wildlife corridors because suitable habitat is present in the treatment area. These impacts were found to be within the scope of the PEIR. These treatment activities are also within the scope because they are the same as those analyzed in the PEIR. It is expected that wildlife corridors will ultimately be improved by the treatment activities. By protecting the forest ecosystem as a whole, the habitat corridors, while slightly degraded in the short term, will be protected from high intensity wildfire in the future. This will conserve the corridors in the long run and promote a healthy fire resilient ecosystem. Furthermore, with the inclusion of the riparian zone protections, there will be areas of intact wildlife corridors which connect multiple treatment areas to untreated landscapes.

Impact BIO-6
The treatment activities do not have the potential to result in the reduction of habitat or abundance of common wildlife. There is expected to be an increase in habitat for species throughout the treatment area, due to the removal of dead and down, and the return of the forests to a historically accurate stocking level. Furthermore, the consequences of widespread high severity wildfire would be catastrophic to wildlife and their habitat. By taking steps to reduce standing dead and down fuels and improve fire resiliency of existing habitat, the potential for such a wildfire to occur will be greatly reduced. Because of this, the project as proposed will not have a significant negative impact to common wildlife habitat or individuals and a long-term increase and net benefit to habitat and wildlife is expected. The treatment activities are consistent with those analyzed in the PEIR and are therefore within the scope of the PEIR.

Impact BIO-7
This impact does not apply to the treatment areas.

Impact BIO-8
This impact does not apply to the treatment areas.

CalVTP Addendum: Change to Geographic Extent
The inclusion of land that is outside of the treatable landscape presented in the PEIR, constitutes a change in the geographic extent presented in the PEIR. The habitat conditions and characteristics as well as the biological resources present in these areas are the same as those within the treatable landscape. Also, during the scoping process all habitat types within the project area were used to analyze impacts to the potential biological resources. Consequently, the additional areas included in this project have been reviewed in the same way that the treatable landscape was assessed, and the potential biological resources are consistent throughout. Thus, this area was found to be within the scope of the PEIR.

PD-3.6: GEOLOGY, SOILS, PALEONTOLOGY, AND MINERAL RESOURCES

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact GEO-1: Result in Substantial Erosion or Loss of Topsoil	LTS	Impact GEO-1, pp. 3.7-26 – 3.7-29	Yes	GEO-1 through GEO-8, AQ-3, AQ-4	NA	LTS	No	Yes
Impact GEO-2: Increase Risk of Landslide	LTS	Impact GEO-2, pp. 3.7-29 – 3.7-30	Yes	GEO-1, GEO-4, GEO-7, GEO-8, AQ-3	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; LTSM: Less than significant with mitigation; PSU: Potentially Significant and unavoidable; PS: Potentially Significant

New Geology, Soils, Paleontology, and Mineral Resource Impacts: Would the treatment result in other impacts to geology, soils, paleontology, and mineral resources that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact GEO-1

There is a potential for the treatment activities to cause erosion and loss of topsoil. This impact was examined in the PEIR and determined to be less than significant. The proposed project is within the scope of the PEIR because the treatment activities are the same as those examined in the PEIR. Furthermore, with the inclusion of SPR GEO-1-8, the impact will be reduced to a level of insignificance. By postponing ground disturbing operations during saturated soil conditions and implementing the erosion control measures outlined in the SPRs the project proponent will ensure the topsoil is protected.

For SPR GEO-3: It is not practical to treat all exposed soil with mulch after a prescribed fire which exposes more than 50% of the soil surface within a treatment area. Prescribed fire treatments in this project are intended to reduce fuel loading, by adding mulch to an area that was just burned, the project proponent would essentially be putting fuel back on the landscape. Prescribed fire conditions are likely to produce low-moderate intensity fire which will retain overhead canopy cover within treated forests, this overhead canopy cover will provide energy dissipation for rainfall and will eventually provide mulch cover from leaf litter. Prescribed fire in chaparral or shrub ecosystems are likely to produce high-intensity stand-replacing fire, however these ecosystems are adapted to this kind of fire. If the project proponent decides to burn, chaparral will be burned in patches to prevent

exposing large areas of bare soil with the project area and avoid hydrolyzing the soil. Potential impacts to wet areas and riparian resources will be avoided by maintaining ground cover in the WLPZ.

Prescribed fire conditions in grass or savannah ecosystems are likely to produce low-severity fire, meaning they quickly restore ground cover due to their existing seed bed which prevents catastrophic topsoil loss in the long term. Finally, the scale in which fire is used on a landscape, is such that the degree of soil exposed can be up to 100 or more acres, which makes wide-scale mulch application infeasible.

For these reasons, it is unreasonable to assume that mulching or otherwise stabilizing all exposed soils treated with fire. The project proponent will only stabilize disturbed soil when more than 50% of the treatment area exposes bare mineral soil as a result of prescribed fire, immediately around road watercourse crossings, within WLPZ areas, and within potentially unstable areas.

Impact GEO-2

The treatment activities would include vegetation treatments on steep slopes. An RPF has assessed the treatment areas on slopes over 50% to identify potentially unstable areas. Unstable areas that were identified by the RPF during reconnaissance are mapped. There is still a potential for unstable areas to exist in these locations because they have not been reviewed by an Engineering Geologist or Geotechnical Engineer, but with the inclusion of the SPRs listed in the table above, the potential for triggering landslides as a result of the treatments has been reduced to a level of insignificance. See appendix C for a map of the potential unstable areas that were identified by the RPF during these initial reconnaissance surveys. Operations will not occur within these areas unless reviewed by a licensed Engineering Geologist or Geotechnical Engineer.

Impact GEO-2 is within the scope of the PEIR because the treatment activities are the same as those assessed in the PEIR.

CalVTP Addendum: Change to Geographic Extent

The inclusion of land within the CalVTP that is outside of the treatable landscapes constitutes a change to the geographic extent presented in the PEIR. However, within the boundary of the project area, the geology, slopes, and types of treatments are representatively the same, both outside and inside the treatable landscape, thus the potential impacts will be the same.

PD-3.7: GREENHOUSE GAS EMISSIONS

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact GHG-1: Conflict with Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of GHGs	LTS	Impact GHG-1, pp. 3.8-10 – 3.8-11	Yes	NA	NA	LTS	No	yes
Impact GHG-2: Generate GHG Emissions through Treatment Activities	PSU	Impact GHG-2, pp. 3.8-11 – 3.8-17	Yes	AQ-3	GHG-2	PSU	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; LTSM: Less than significant with mitigation; PSU: Potentially Significant and unavoidable; PS: Potentially Significant

New GHG Emissions Impacts: Would the treatment result in other impacts to GHG emissions that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact GHG-1

Use of vehicles/equipment and prescribed burning during treatment activities will result in greenhouse gas emissions. Conflicts with applicable plans, policy, and regulations aimed at reducing GHG emissions may occur due to this project. This was examined in the PEIR. These impacts associated with this project are within the scope of the PEIR because the treatment activities, types of equipment, and duration of use are the same as those analyzed in the PEIR. Furthermore, by carrying out the project in this way, the goal will be to reduce the likelihood of a catastrophic wildfire from occurring. This type of event would create a massive GHG emission at one time. The controlled release of GHG in small amounts during this project is far less impactful than the, all at once, release which is likely to occur during a catastrophic wildfire. SPR GHG-1 is not applicable to the proposed project because the property is not a registered carbon offset property. As such, the requirement to inform reporting under the Board of Forestry and Fire Protection's assembly bill 1504 Carbon Inventory Process does not apply.

Impact GHG-2

Use of vehicles/equipment and prescribed burning during treatment activities will result in greenhouse gas emissions. This was examined in the PEIR. These impacts associated with this project are within the scope of the PEIR because the treatment activities, types of equipment, and duration of use are the same as those analyzed in the PEIR. SPR GHG-1 is not applicable to the proposed project because the property is not a registered carbon offset property. As such, the requirement to inform reporting under the Board of Forestry and Fire Protection's

assembly bill 1504 Carbon Inventory Process does not apply. Mitigation measure GHG-2 will be applied to reduce the GHG emissions during prescribed fire activity. These measures, such as mosaic burning, low fuel consumption, and retention of LWD/snags will provide for Biochar production, carbon sequestration, and reduced carbon emissions.

CalVTP Addendum: Change to Geographic Extent

The inclusion of land that is outside of the treatable landscapes constitutes a change to the geographic extent of the PEIR. However, the same plans policies, and regulations adopted to reduce GHG emissions apply in the areas outside the treatable landscape, as within it. Likewise, the climate conditions are the same within the treatable landscape as they are just outside of it for this project. The fuel composition outside of the treatable landscape ranges from the same fuel loading and type to drastically lower fuel loading. The resulting emissions related to all treatment activities will be either the same or significantly less than within the treatable landscape. Because of this the GHG impacts listed above will be the same or lesser; the resulting within the scope finding stands.

PD-3.8: ENERGY RESOURCES

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact ENG-1: Result in Wasteful, Inefficient, or Unnecessary Consumption of Energy	LTS	Impact ENG-1, pp. 3.9-7 – 3.9-8	Yes	NA	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

New Energy Resource Impacts: Would the treatment result in other impacts to energy resources that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact ENG-1

The impact to energy resources as a result of this project would be the same as described in the PEIR. This impact was determined to be less than significant and unavoidable. The impact is expected to decrease over time as equipment and methods used for vegetation management become more efficient.

CalVTP Addendum: Change to Geographic Extent

The inclusion of land that is outside of the treatable landscapes constitutes a change to the geographic extent of the PEIR. However, the energy use outside of the treatable landscape is expected to be similar, if not the same as within it. This is because the vegetation types, fuel types, and slopes are mostly consistent throughout. Likewise, the equipment used will not vary. As a result of this information, the impact determination will not change.

PD-3.1: HAZARDOUS MATERIALS, PUBLIC HEALTH AND SAFETY

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact HAZ-1: Create a Significant Health Hazard from the Use of Hazardous Materials	LTS	Impact HAZ-1, pp. 3.10-14 – 3.10-15	Yes	HAZ-1, HYD-4	NA	LTS	No	Yes
Impact HAZ-2: Create a Significant Health Hazard from the Use of Herbicides	LTS	Impact HAZ-2, pp. 3.10-15 – 3.10-18	Yes	HAZ-5, HAZ-6, HAZ-7, HAZ-8, HAZ-9	NA	LTS	No	Yes
Impact HAZ-3: Expose the Public or Environment to Significant Hazards from Disturbance to Known Hazardous Material Sites	PS	Impact HAZ-3, pp. 3.10-18 – 3.10-19	Yes	NA	HAZ-3	LTSM	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; PS: Potentially Significant; LTSM: Less than Significant after Mitigation

New Hazardous Materials, Public Health and Safety Impacts: Would the treatment result in other impacts related to hazardous materials, public health and safety that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact HAZ-1

The proposed treatment activities would require the use of fuels and related accelerants, which are hazardous materials. The potential for these treatment activities to cause a significant health hazard was examined in the PEIR and determined to be Less than significant. This impact is within the scope of the PEIR because the treatment activities, associated equipment, and types of hazardous materials used are the same as those analyzed in the PEIR.

Impact HAZ-2

Herbicide application is proposed to control invasive non-native plants/trees, as well as reduce the level of resprouting within the shaded fuel breaks. Application will be achieved by ground methods only (no aerial spraying will occur). The target plant will be backpack sprayed or cut and stump painted. The potential for treatment activities to cause a significant health hazard was examined in the PEIR. This impact is within the scope

of the PEIR because the types of herbicides and the application methods proposed are the same as those analyzed in the PEIR. With the implementation of SPRs HAZ-5 through HAZ-9, the impacts will be less than significant.

Impact HAZ-3
Soil disturbance during mechanical treatments and prescribed burning have the potential to expose workers, the public and the environment to existing hazardous materials, if present within the treatment areas. This impact was examined in the PEIR and determined to be potentially significant, and less than significant after mitigation. The impact is the same for this project because the treatment types and potential hazardous materials are the same.

Mitigation HAZ-3 will be implemented by the project proponent prior to implementation of mechanical and prescribed fire treatment activities.

CalVTP Addendum: Change to Geographic Extent

The inclusion of land that is outside of the treatable landscapes constitutes a change to the geographic extent presented in the PEIR. However, the hazardous materials used, the environmental conditions, and the exposure potential are the same as what was analyzed in the PEIR. Furthermore, the regulatory conditions and policies are the same. As a result, the inclusion of land outside of the treatable landscape is within the scope of the PEIR.

PD-3.2: HYDROLOGY AND WATER QUALITY

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact HYD-1: Violate Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface or Ground Water Quality, or Conflict with or Obstruct the Implementation of a Water Quality Control Plan Through the Implementation of Prescribed Burning	LTS	Impact HYD-1, pp. 3.11-25 – 3.11-27	Yes	HYD-1, HYD-4, GEO-4, GEO-6, AQ-3	NA	LTS	No	Yes
Impact HYD-2: Violate Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface or Ground Water Quality, or Conflict with or Obstruct the Implementation of a Water Quality Control Plan Through the Implementation of Manual or Mechanical Treatment Activities	LTS	Impact HYD-2, pp. 3.11-27 – 3.11-29	Yes	HYD-1, HYD-2, HYD-4, HYD-5, HYD-6, GEO-1, GEO-2, GEO-4, GEO-5, GEO-7, GEO-8, HAZ-1, HAZ-5	NA	LTS	No	Yes
Impact HYD-3: Violate Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface or Ground Water Quality, or Conflict with or Obstruct the Implementation of a Water Quality Control Plan Through Prescribed Herbivory	LTS	Impact HYD-3, p. 3.11-29	Yes	HYD-1, HYD-3, HYD-4, GEO-4, GEO-6,	NA	LTS	No	Yes
Impact HYD-4: Violate Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface or Ground Water Quality, or Conflict with or Obstruct the Implementation of a Water Quality Control Plan Through the Ground Application of Herbicides	LTS	Impact HYD-4, pp. 3.11-30 – 3.11-31	Yes	HYD-1, HYD-4 HYD-5, BIO-4, HAZ-5, HAZ-6 HAZ-7	NA	LTS	No	Yes

Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact HYD-5: Substantially Alter the Existing Drainage Pattern of a Treatment Site or Area	LTS	Impact HYD-5, p. 3.11-31	Yes	HYD-4, HYD-6, GEO-1, GEO-2, GEO-5	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; PS: Potentially Significant; LTSM: Less than Significant after Mitigation

New Hydrology and Water Quality Impacts: Would the treatment result in other impacts to hydrology and water quality that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact HYD-1
Ash and debris from prescribed burning could be washed by runoff into drainages and streams and this potential impact was assessed in the PEIR. To prevent this impact, treatment areas are designed to protect streams and watercourses, while implementing erosion control measures as described in the SPRs. WLPZs and C III watercourse protection measures will ensure adequate filter strips to avoid significant impacts from this treatment activity. See HYD-4 in the SPRs in Attachment A. This impact was assessed in the PEIR and found to be less than significant with the implementation of the SPRs listed above. The treatment activity is within the scope of the PEIR because it is designed to be a low intensity prescribed burn, which is the same as what was analyzed in the PEIR. Chaparral is planned to be burned at an appropriate interval to prevent converting this ecotype. Chaparral will be burned in patches to prevent exposing large areas of bare soil within the project area and avoid hydrolyzing the soil. These burn unit designs will be approved by an RPF to ensure this impact remains less than significant.

Impact HYD-2
Vegetation treatments will include mechanical and manual methods. WLPZs and C III watercourse protection measures will ensure adequate filter strips to avoid significant impacts from this treatment activity. See HYD-4 in the SPRs in Attachment A. This will significantly limit activities within the WLPZs and C IIIs to lower this impact to a level of insignificance. Heavy equipment shall not be used when saturated soil conditions exist. This will significantly reduce compaction, soil loss, and sedimentation. Waterbars shall be installed where necessary, as outlined in the SPRs, to prevent sedimentation. This includes existing roadway drainage structure protection, as well as areas exposed during mechanical treatments.

Mechanical treatments will most often entail mastication, which incorporates mulch in the form of wood chips. The chips created during this type of treatment will act as a mulch, covering any freshly exposed soil, preventing soil loss during heavy rain events. Erosion control monitoring shall ensure all facilities are functioning and exposed soil is not at risk of delivering to any class I, II, or III watercourses. Impact HYD-2 was assessed in the PEIR and found to be less than significant with the implementation of the listed SPRs. The treatment activity is within the scope of the PEIR because it is the same as what was analyzed in the PEIR.

Impact HYD-3
Prescribed herbivory does have the potential to violate water quality standards, but with the inclusion of the SPRs listed above, the impact will be less than significant. WLPZs and C III watercourse protection measures will ensure adequate filter strips to avoid significant impacts from this treatment activity. See HYD-3 in the SPRs in Attachment A. This impact was assessed in the PEIR and found to be less than significant. The treatment activity is within the scope of the PEIR because it is the same as what was analyzed in the PEIR.

Impact HYD-4
The use of herbicide has the potential to violate water quality standards. WLPZs and C III watercourse protection measures will ensure adequate filter strips to avoid significant impacts from this treatment activity. See SPRs in Attachment A. These SPRs pertinent to this impact were designed to prevent herbicide from entering waterways in amounts deleterious to water quality. SPR HAZ-5 requires the project proponent to prepare a spill prevention and response plan prior to beginning any herbicide treatment activities. This will mitigate potential impacts associated with spilled chemicals reaching waterways. Herbicide use will comply with application regulations as per SPR HAZ-6. Use will be coordinated with the County Agricultural Commissioner, and all required licenses and permits will be obtained prior to herbicide application. All herbicide applications will be implemented consistent with recommendations prepared annually by a licensed PCA.

This impact was assessed in the PEIR and found to be less than significant with the implementation of the SPRs listed above. The treatment activity is within the scope of the PEIR because it is the same as what was analyzed in the PEIR.

Impact HYD-5
Treatment activities could cause ground disturbance and erosion, which could directly or indirectly modify existing drainage patterns. WLPZs and C III watercourse protection measures will ensure adequate filter strips to avoid significant impacts from these treatment activities. The SPRs listed above will require waterbar placement where erosion and runoff are highly likely, as well as require repair and maintenance of existing drainage and erosion control infrastructure. This doesn't mean existing erosion control issues will be fixed, but rather all erosion control devices functioning pre-project implementation shall be maintained.

Impact HYD-5 was assessed in the PEIR and found to be less than significant with the implementation of the listed SPRs. The treatment activities are within the scope of the PEIR because they are the same as those analyzed in the PEIR.

CalVTP Addendum: Change to Geographic Extent

The inclusion of land that is outside of the treatable landscapes constitutes a change to the geographic extent presented in the PEIR. However, the hydrology, topography, and treatment methods are consistent with those analyzed in the PEIR, thus they are also within the scope of the PEIR. Furthermore, the existing environmental and regulatory conditions pertinent to hydrology and water quality are the same.

PD-3.3: LAND USE AND PLANNING, POPULATION AND HOUSING

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact LU-1: Cause a Significant Environmental Impact Due to a Conflict with a Land Use Plan, Policy, or Regulation	LTS	Impact LU-1, pp. 3.12-13 – 3.12-14	No	NA	NA	NA	NA	NA
Impact LU-2: Induce Substantial Unplanned Population Growth	LTS	Impact LU-2, pp. 3.12-14 – 3.12-15	No	NA	NA	NA	NA	NA

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; PS: Potentially Significant; LTSM: Less than Significant after Mitigation

New Land Use and Planning, Population and Housing Impacts: Would the treatment result in other impacts to land use and planning, population and housing that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact LU-1
NA

Impact LU-2
NA

New Land Use and Planning, Population and Housing Impacts
NA

PD-3.4: NOISE

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact NOI-1: Result in a Substantial Short-Term Increase in Exterior Ambient Noise Levels During Treatment Implementation	LTS	Impact NOI-1, pp. 3.13-9 – 3.13-12; Appendix NOI-1	No	None	NA	NA	NA	NA
Impact NOI-2: Result in a Substantial Short-Term Increase in Truck-Generated SENL's During Treatment Activities	LTS	Impact NOI-2, p. 3.13-12	No	None	NA	NA	NA	NA

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; PS: Potentially Significant; LTSM: Less than Significant after Mitigation

New Noise Impacts: Would the treatment result in other noise-related impacts that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact NOI-1
There are no nearby receptors sensitive to increased ambient noise levels.

Impact NOI-2
There are no nearby receptors sensitive to increased ambient noise levels.

New Noise Impacts
N/A

PD-3.5: RECREATION

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact REC-1: Directly or Indirectly Disrupt Recreational Activities within Designated Recreation Areas	LTS	Impact REC-1 pp. 3.14-6 – 3.14-7	No	None	NA	NA	NA	NA

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; PS: Potentially Significant; LTSM: Less than Significant after Mitigation

New Recreation Impacts: Would the treatment result in other impacts to recreation that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact REC-1
No recreational areas will be impacted by this project.

New Recreation Impacts
N/A

PD-3.6: TRANSPORTATION

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact TRAN-1: Result in Temporary Traffic Operations Impacts by Conflicting with a Program, Plan, Ordinance, or Policy Addressing Roadway Facilities or Prolonged Road Closures	LTS	Section 3.15.2; Impact TRAN-1 pp. 3.15-9 – 3.15-10	No	NA	NA	NA	NA	NA
Impact TRAN-2: Substantially Increase Hazards due to a Design Feature or Incompatible Uses	LTS	Impact TRAN-2 pp. 3.15-10 – 3.15-11	Yes	AD-3, HYD-1, TRAN-1	NA	LTS	No	Yes
Impact TRAN-3: Result in a Net Increase in VMT for the Proposed CalVTP	PSU	Impact TRAN-3 pp. 3.15-11 – 3.15-13	Yes	NA	AQ-1; *See exclusions in discusion*	PSU	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; PSU: Potentially Significant and Unavoidable; LTSM: Less than Significant after Mitigation

New Transportation Impacts: Would the treatment result in other impacts to transportation that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact TRAN-1
NA

Impact TRAN-2
Smoke generated during prescribed burning operations may necessitate the implementation of a Traffic Management Plan (TMP). The need for this will be assessed further during the preparation of the prescribed burn plan based on weather, location of burn and orientation to local traffic patterns. Kings ridge road and Morhardt Ridge Road are the only roads close enough to be impacted by smoke during prescribed burning activities. The public use of these roads are very light at all times of the year and will thus likely not require a traffic management plan during burning operations.

This impact was assessed in the PEIR. The impact of this project is within the scope of the PEIR because the treatment activity is the same.

Impact TRAN-3
This impact was examined in the PEIR and found to be potentially significant and unavoidable after mitigation. This projects impact determination is the same because the project utilizes the same treatment methods and equipment.

Mitigation measure AQ-1 will be applied where feasible and will, along with the SPRs, reduce the impact. The following mitigation measures listed under AQ-1 will not be applied due to lack in technology and infeasibility at the local level:

- Electric and gasoline-powered equipment will be substituted for diesel-powered equipment.
    - *Currently there are no alternatives available which offer the functional ability to handle the workload required for the treatment activities. Diesel engines are the most efficient and widely available option for completing fuels treatments, particularly with regards to mechanical treatment activities. Furthermore, gasoline engines lack the torque required to complete treatments on steep slopes under extreme loads. This is where Diesel engines have an advantage, allowing treatment on areas which would otherwise be untreatable. Diesel powered equipment also has a greater workload ability, allowing work to be completed faster. This has both an economic impact to the project as well as a reduced duration of air quality offense.*

      Lithium-ion batteries lack the range and charging speed to allow "theoretical" electric powered heavy equipment to complete the job within any sort of real-world efficiency. Because the jobs are so far from any charging station, it would be necessary to have a mobile charging source. That charging source would likely require a gas-powered generator to work (due to the location of the proposed treatments), thus defeating the purpose of the mitigation measure.

      Ultimately, the technology is lacking, both locally and elsewhere, to include this mitigation measure as a feasible option.

CalVTP Addendum: Change to Geographic Extent

The inclusion of land that is outside of the treatable landscapes constitutes a change to the geographic extent presented in the PEIR. However, the land included doesn't contain new areas which introduce new regulatory environments or change the impact on transportation as analyzed.

PD-3.7: PUBLIC SERVICES, UTILITIES AND SERVICE SYSTEMS

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact UTIL-1: Result in Physical Impacts Associated with Provision of Sufficient Water Supplies, Including Related Infrastructure Needs	LTS	Section 3.16.1 pp. 3.16-2 – 3.16-3; Impact UTIL-1 p. 3.16-9	Yes	NA	NA	LTS	No	Yes
Impact UTIL-2: Generate Solid Waste in Excess of State Standards or Exceed Local Infrastructure Capacity	PSU	Section 3.16.1 pp. 3.16-3 -3.16-5; Impact UTIL-2 pp. 3.16-10 – 3.16-12	No	NA	None	NA	NA	NA
Impact UTIL-3: Comply with Federal, State, and Local Management and Reduction Goals, Statutes, and Regulations Related to Solid Waste	LTS	Section 3.16.2 pp. 3.16-6 – 3.16-7; Impact UTIL-2 p. 3.16-12	No	NA	NA	NA	NA	NA

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

LTS: Less than Significant; PS: Potentially Significant; LTSM: Less than Significant after Mitigation

New Public Services, Utilities and Service System Impacts: Would the treatment result in other impacts to public services, utilities and service systems that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact UTIL-1

Treatments involve the use of prescribed burning, which may require water usage if the burn goes out of prescription. Also, water may be utilized for dust abatement as described in the SPRs. The potential increased demand for water was examined in the PEIR. The impact is within the scope of the PEIR because the activities scope and duration are the same as those analyzed in the PEIR. The amount of water potentially required was assessed in the PEIR and found to be less than significant.

Impact UTIL-2
Vegetation biomass and other material will not be transported off site during operations. All vegetation shall be burned, chipped, or lopped and scattered on site.

Impact UTIL-3
NA

CalVTP Addendum: Change to Geographic Extent

The inclusion of land that is outside of the treatable landscapes constitutes a change to the geographic extent presented in the PEIR. However, the land included doesn't contain new areas which when burned, will require a significant increase in the required water used for prescribed fire mop up. Also, the environmental conditions are the same as those assessed within the treatable landscape. As a result, there are not expected to be any new impacts related to UTIL-1 , 2, or 3. The included areas are within the scope of the PEIR.

PD-3.8: WILDFIRE

Impact in the PEIR			Project-Specific Checklist					
Environmental Impact Covered In the PEIR	Identify Impact Significance in the PEIR	Identify Location of Impact Analysis in the PEIR	Does the Impact Apply to the Treatment Project?	List SPRs Applicable to the Treatment Project[1]	List MMs Applicable to the Treatment Project[1]	Identify Impact Significance for Treatment Project	Would this be a Substantially More Severe Significant Impact than Identified in the PEIR?	Is this Impact Within the Scope of the PEIR?
Would the project:								
Impact WIL-1: Substantially Exacerbate Fire Risk and Expose People to Uncontrolled Spread of a Wildfire	LTS	Section 3.17.1; Impact WIL-1 pp. 3.17-14 – 3.17-15	Yes	HAZ-2, HAZ-3, HAZ-4	NA	LTS	No	Yes
Impact WIL-2: Expose People or Structures to Substantial Risks Related to Post-Fire Flooding or Landslides	LTS	Section 3.17.1; Impact WIL-2 pp. 3.17-15 – 3.17-16	Yes	AQ-3, GEO-1 GEO-2, GEO-3, GEO-4, GEO-5, GEO-8	NA	LTS	No	Yes

[1]NA: not applicable; there are no SPRs and/or MMs identified in the PEIR for this impact. None: there are SPRs and/or MMs identified in the PEIR for this impact, but none are applicable to the treatment project.

New Wildfire Impacts: Would the treatment result in other impacts related to wildfire that are not evaluated in the CalVTP PEIR?	☐ Yes	☒ No	If yes, complete row(s) below and discussion

	Potentially Significant	**Less Than Significant with Mitigation Incorporated**	**Less than Significant**
[identify new impact here, if applicable; add rows as needed]	☐	☐	☐

Discussion

Impact WIL-1

Treatment activities pose a risk of wildfire ignition as well as prescribed fire escaping its control lines. This potential risk was examined in the PEIR and found to be less than significant with implementation of the SPRs. This impact is within the scope of the PEIR because the treatment activities, types of equipment and duration/intensity are the same as those analyzed in the PEIR. The project proponent is responsible for maintaining control lines during all prescribed burning activities.

Impact WIL-2

Steep slopes occur within the project area. The potential exposure for people or structures to post-fire landslides was examined in the PEIR. This impact is within the scope of the PEIR because the treatment activities, types of equipment and duration/intensity are the same as those analyzed in the PEIR. With the implementation of the above listed SPRs, the impact should be less than significant. During prescribed burning activities, the goal is to maintain a low fire intensity. In general, impacts related to post fire landslides occur after high intensity wildfires that cause soils to become hydrophobic. This is due to the level of heat applied to the soil in a short period of time. Because of this, damage to the soil is not expected as a result of these low intensity burns. This combined with the SPRs listed above support the finding that this impact will not occur, or will be less than significant.

CalVTP Addendum: Change to Geographic Extent

The inclusion of land that is outside of the treatable landscapes constitutes a change to the geographic extent presented in the PEIR. However, the land included doesn't contain new areas which when treated, will cause a significant increase in the impacts listed above. Also, the environmental conditions are the same as those assessed within the treatable landscape. The included areas outside the treatable landscape have the same environmental conditions, vegetation types, erosion hazard ratings, geology, and orientations to the public as within the treatable landscapes. As a result, there are not expected to be any new impacts outside the scope of the PEIR. Consequently, these additional areas are within the scope of the PEIR.

References

- Fire in California's Ecosystems. 2006. Neil G. Sugihara, Jan W. Van Wagtendonk, Keven E Shaffer, Joann Fites-kaufman, Andrea E. Thode. University of California Press, Berkeley and Los Angeles, California.
- CalEPA. California Environmental Protection Agency
- California Department of Fish and Wildlife. Wildlife.ca.gov
- California Department of Transportation. List of eligible and officially designated scenic highways. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways.
- Inventory of Rare and Endangered Plants of California. California Native Plant Society. (online). https://www.rareplants.cnps.org.
- California Natural Diversity Database. 2021. Results of records search. Sacramento: California Department of Fish and Wildlife, Biogeographic Data. List updated August, 2021.
- Caltrans. California Department of Transportation.
- Cooperative Forest Management Plan. March 31, 2023
- DTSC. California Department of Toxic Substances Control.
- Natural Resource Conservation Service. Web Soil Survey. https://websoilsurvey.nrcs.usda.gov/app/.
- California Forest Practice Rules 2020. State of California. Department of Forestry and Fire Protection. P.O. Box 944256, Sacramento, CA 94244-2460
- John D. Stuart, John O. Sawyer Trees and Shrubs of California. University of California Press Berkeley and Los Angeles, California. 2001.
- David L. Wood, Thomas W. Koerber, Robert F. Scharpf, Andrew J. Storer. Pests of the Native California Conifers, University of California Press Berkeley and Los Angeles, California. 2003
- National Audubon Society, Field Guide to Trees, Western Region: Elbert L. Little. Chanticleer Press Inc. 1980
- Weaver and Hagans. Handbook For Forest And Ranch Roads , 2015
- Joyce and Nungesser, 2000. Ecosystem Productivity and the Impact of Climate Change: USDA Forest Service Gen. Tech. Rep. RMRS-GTR-59. (pgs. 46-68) 2000.
- North Coast Regional Water Quality Control Board (NCRWQCB) 2006. Desired Salmonid Freshwater Habitat Conditions for Sediment-Related Indices, July 28, 2006. 60 pgs.
- Chamberlin, T. W. et al. 1991. Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats. Special Publication 19, American Fisheries Society, Bethesda, Maryland. Pg. 181-205.
- Everest, F. H. and W. R. Meehan. 1981. Some Effects of Debris Torrents on Habitat of Anadromous Salmonids. National Council of the Paper Industry for Air and Stream Improvement, Technical Bulletin No. 353, New York, NY. Pg 23-30.
- Madej, M. A. et al. 2000. Effectiveness of Road Restoration in Reducing Sediment Loads. Unpublished Report, U.S. Geological Survey Redwood Field Station, Arcata, CA.
- McGarigal, K. and W. C. McComb. 1995. Relationships Between Landscape Structure and Breeding Birds in the Oregon Coast Range. Ecological Monographs, Volume 65. pg. 235-260.
- Megahan, W. F. Roads and Forest Site Productivity. U.S. Forest Service, Intermountain Research Station, Ogden UT.
- Murphy, M. L. 1995. Forestry Impacts on Freshwater Habitat of Anadromous Salmonids in the Pacific Northwest and Alaska-- Requirements for Protection & Restoration. NOAA Coastal Ocean Program Decision Analysis Series No. 7. U.S. Dept. of Commerce, National Oceanic & Atmospheric Administration, Coastal Ocean Office, Silver Spring, MD.

- Reeves, G. H., J. D. Hall, T. D. Roelofs, T. L. Hickman, and C. O. Baker. 1991. Rehabilitating and modifying stream habitats. Pages 519-557 *in* W. R. Meehan, ed. Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats. American Fisheries Society, Bethesda, Maryland. Special Publication 19.
- Reeves, G. H. et al. 1995. A Disturbance-Based Ecosystem Approach to Maintaining and Restoring Freshwater Habitats of Evolutionarily Significant Units of Anadromous Salmonids in the Pacific Northwest. American Fisheries Society Symposium 17, Bethesda, MD. Pg 334-349.
- Reid, L.M. 1998. Proceedings of the Conference on Coastal Watersheds: The Caspar Creek Story. Pacific Southwest Research Station, Albany, CA. pg 117-127.
- Rice, R. et al. 1975. Sampling Water Quality to Determine the Impact of Land Use on Small Streams. Paper presented at ASCE Watershed Management Symposium, Utah State University, Utah. August, 1975.
- Sindel, J. E. 1960. Jackson State Forest Pilot Study in Stream Clearance 1952-1959California Division of Forestry. Sacramento, California.
- Yocom, C. F. and S. W. Harris 1975. Birds of Northwestern California. Humboldt State University, Arcata, CA.
- Ziemer, R.R. 1981. Roots and Stability of Forested Slopes. In proceedings: Symposium on Erosion and Sediment Transport in Pacific Rim Steeplands. Christchurch, New Zealand. January 1991. Pages 343-361.
- Zwieniecki,M. A. and M. Newton. 1999. Influences of Streamside Cover and Stream Features on Temperature Trends in Forested Streams of Western Oregon. Western Journal of Applied Forestry, Volume 14, Issue 2, pg. 106-113.
- Purcell, K. L., A. K. Mazzoni, S.R. Mori & B. B. Boroski. 2009. Resting structures & resting habitat of fishers in the southern Sierra Nevada, Ca. Forest Ecology & Management. 258 (2009) 2696-2706. http://naldc.nal.usda.gov/download/35920/PDF
- Rombough, C.J. 2006. Wintering Habitat Use by Juvenile Foothill Yellow-Legged Frogs (*Rana boylii*): The Importance of Seeps. Northwestern Naturalist 87:159.
- https://ucjeps.berkeley.edu/eflora