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OFFICIAL RESPONSE OF THE DIRECTOR OF THE CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION TO SIGNIFICANT ENVIRONMENTAL POINTS RAISED DURING THE TIMBER HARVESTING PLAN EVALUATION PROCESS

THP NUMBER: 4-21-00047-TUO

SUBMITTER: Sierra Pacific Industries

COUNTY: Tuolumne

END OF PUBLIC COMMENT PERIOD: August 5, 2021

DATE OF OFFICIAL RESPONSE/DATE OF APPROVAL: August 17, 2021

The California Department of Forestry and Fire Protection has prepared the following response to significant environmental points raised during the evaluation of the above-referenced plan. Comments made on like topics were grouped together and addressed in a single response. Where a comment raised a unique topic, a separate response is made. Remarks concerning the validity of the review process for timber operations, questions of law, or topics or concerns so remote or speculative that they could not be reasonably assessed or related to the outcome of a timber operation, have not been addressed.

Sincerely,

John Ramaley

John Ramaley, RPF #2504
Forester III
Cascade, Sierra & Southern Regions

cc: Unit Chief
RPF, Sierra Pacific Industries, Plan Submitter
Dept. of Fish & Wildlife, Reg. 4, Water Quality, Reg. 5
Central Sierra Environmental Resource Center
Peggy Metzger

COMMON FOREST PRACTICE ABBREVIATIONS

CAL FIRE	Department of Forestry & Fire Protection	FPR	Forest Practice Rules
CAA	Confidential Archaeological Addendum	LTO	Licensed Timber Operator
CESA	California Endangered Species Act	NMFS	National Marine Fisheries Service
CEQA	California Environmental Quality Act	PHI	Pre-Harvest Inspection
CIA	Cumulative Impacts Assessment	RPF	Registered Professional Forester
CGS	California Geological Survey	THP	Timber Harvest Plan
CSO	California Spotted Owl	USFS	United States Forest Service
DBH	Diameter at Breast Height	WLPZ	Watercourse/Lake Protection Zone
DFG	Department of Fish & Game	WQ	California Regional Water Quality Control Board
DPR	Department of Pesticide Regulation	PCA	Pest Control Advisor
NSO	Northern Spotted Owl	*[SIC]*	Word used verbatim as originally printed in another document. May indicate a misspelling or uncommon word usage.
CDFW/DFW	California Dept. of Fish & Wildlife		

AB 32	Assembly Bill 32	ARB	Air Resources Board
NPP	Net Primary Production	BOF	Board of Forestry
NEPA	National Environ. Policy Act	CAPCOA	Calif. Air Pollution Control Officers Assoc.
NEP	Net Ecosystem Production	CCR	Calif. Code of Regulations
NTMP	NonIndust. Timb. Manag. Plan	CESA	Calif. Endangered Species Act
OPR	Govrn's Office of Plan. & Res.		
Pg	Petagram = 10^{15} grams		
PNW	Pacific NorthWest		
CO_2	Carbon Dioxide	PRC	Public Resources Code
CO_2e	Carbon Dioxide equivalent	RPA	Resource Plan. and Assess.
DBH/dbh	Diameter Breast Height	RPF	Registered Professional Forester
DFG	Calif. Department of Fish and Game	SPI	Sierra Pacific Industries
EPA	Environmental Protection Agency	SYP	Sustained Yield Plan
FPA	Forest Practice Act	tC	tonnes of carbon
FPR	Forest Practice Rules	Tg	Teragram = 10^{12} grams
GHG	Greenhouse Gas	THP	Timber Harvesting Plan
ha^{-1}	per hectare	LBM	Live Tree Biomass
LTSY	Long Term Sustained Yield	TPZ	Timber Production Zone
m^{-2}	per square meter	USFWS	U.S. Fish & Wildlife Service
MAI	Mean Annual Increment	WAA	Watershed Assessment Area
MMBF	Million Board Feet	WLPZ	Watercourse. & Lake Prot. Zone
$MMTCO_2E$	Million Metric Tons CO_2 equivalent	yr^{-1}	per year

NOTIFICATION PROCESS

In order to notify the public of the proposed timber harvesting, and to ascertain whether there are any concerns with the plan, the following actions are automatically taken on each THP submitted to CAL FIRE:

- Notice of the timber operation is sent to all adjacent landowners if the boundary is within 300 feet of the proposed harvesting, (As per 14 CCR § 1032.7(e))
- Notice of the Plan is submitted to the county clerk for posting with the other environmental notices. (14 CCR § 1032.8(a))
- Notice of the plan is posted at the Department's local office and in Southern-Sierra office in Fresno. (14 CCR § 1032))
- Notice is posted with the Secretary for Resources in Sacramento. (14 CCR § 1032.8(c))
- Notice of the THP is sent to those organizations and individuals on the Department's current list for notification of the plans in the county. (14 CCR § 1032.9(b))
- A notice of the proposed timber operation is posted at a conspicuous location on the public road nearest the plan site. (14 CCR § 1032.7(g))

THP REVIEW PROCESS

The laws and regulations that govern the timber harvesting plan (THP) review process are found in Statute law in the form of the Forest Practice Act which is contained in the Public Resources Code (PRC), and Administrative law in the rules of the Board of Forestry (rules) which are contained in the California Code of Regulations (CCR).

The rules are lengthy in scope and detail and provide explicit instructions for permissible and prohibited actions that govern the conduct of timber operations in the field. The major categories covered by the rules include:

*THP contents and the THP review process
*Silvicultural methods
*Harvesting practices and erosion control
*Site preparation
*Watercourse and Lake Protection
*Hazard Reduction
*Fire Protection
*Forest insect and disease protection practices
*Logging roads and landing

When a THP is submitted to the California Department of Forestry and Fire Protection (CAL FIRE) a multidisciplinary review team conducts the first review team meeting to assess the THP. The review team normally consists of, but is not necessarily limited to, representatives of CAL FIRE, the Department of Fish and Game (DFW), and the Regional

Water Quality Control Board (WQ). The California Geological Survey (CGS) also reviews

THP's for indications of potential slope instability. The purpose of the first review team meeting is to assess the logging plan and determine on a preliminary basis whether it conforms to the rules of the Board of Forestry. Additionally, questions are formulated which are to be answered by a field inspection team.

Next, a preharvest inspection (PHI) is normally conducted to examine the THP area and the logging plan. All review team members may attend, as well as other experts and agency personnel whom CAL FIRE may request. As a result of the PHI, additional recommendations may be formulated to provide greater environmental protection.

After a PHI, a second review team meeting is conducted to examine the field inspection reports and to finalize any additional recommendations or changes in the THP. The review team transmits these recommendations to the RPF, who must respond to each one. The director's representative considers public comment, the adequacy of the registered professional forester's (RPF's) response, and the recommendations of the review team chair before reaching a decision to approve or deny a THP. If a THP is approved, logging may commence. The THP is valid for up to five years, and may be extended under special circumstances for a maximum of 2 years more for a total of 7 years.

Before commencing operations, the plan submitter must notify CAL FIRE. During operations, CAL FIRE periodically inspects the logging area for THP and rule compliance. The number of the inspections will depend upon the plan size, duration, complexity, regeneration method, and the potential for impacts. The contents of the THP and the rules provide the criteria CAL FIRE inspectors use to determine compliance. While CAL FIRE cannot guarantee that a violation will not occur, it is CAL FIRE's policy to pursue vigorously the prompt and positive enforcement of the Forest Practice Act, the forest practice rules, related laws and regulations, and environmental protection measures applying to timber operations on the timberlands of the State. This enforcement policy is directed primarily at preventing and deterring forest practice violations, and secondarily at prompt and appropriate correction of violations when they occur.

The general means of enforcement of the Forest Practice Act, forest practice rules, and the other related regulations range from the use of violation notices which may require corrective actions, to criminal proceedings through the court system. Civil, administrative civil penalty, Timber operator licensing, and RPF licensing actions can also be taken.

THP review and assessment is based on the assumption that there will be no violations that will adversely affect water quality or watershed values significantly. Most forest practice violations are correctable and CAL FIRE's enforcement program seeks to assure correction. Where non-correctable violations occur, civil or criminal action may be taken against the offender. Depending on the outcome of the case and the court in which the case is heard, some sort of supplemental environmental corrective work may be required. This is intended to offset non-correctable adverse impacts. Once a THP is completed, a completion report must be submitted certifying that the area meets the requirements of the rules. CAL FIRE inspects the completed area to verify that all the rules have been followed including erosion control work.

Depending on the silvicultural system used, the stocking standards of the rules must be met immediately or in certain cases within five years. A stocking report must be filed to certify that the requirements have been met. If the stocking standards have not been met, the area must be planted annually until it is restored. If the landowner fails to restock the land, CAL FIRE may hire a contractor to complete the work and seek recovery of the cost from the landowner.

The following issues/concerns were raised during the public comment period and are addressed as follows:

Concern #1: Winter Operations

During the fall, winter, and early spring periods, soils are often saturated for extensive periods of time. This THP, as proposed, would allow the use of class III watercourse crossings, road construction, use of temporary roads, and landing construction during winter months under the Winter Period Operation Plan (WPOP) and Ground Conditions (page 33). The Ground Conditions in the WPOP restrict operations during the winter period with the requirement that operations "*may take place during extended dry periods when roads and landings are generally firm and easily passable or during hard frozen conditions*" (page 33). Our center asserts that it is highly unlikely that field employees doing logging operations will be able to accurately and neutrally judge the conditions of the soils. We recommend that a neutral part be given the authority to make soil condition determinations that allow inter season operations.

This THP would allow mechanical site prep to be conducted during the winter period, "mechanical site preparation will not occur on slopes over 40% during the winter period" (page 32). All of this work creates the potential for a significant amount of sediment runoff to occur throughout the project area which has moderate to high erosion hazard ratings (page 20). Broadcast burns may be used in areas with slopes exceeding 40% (page 32).

Class III watercourse crossing may occur during the Winter Period (page 32). Temporary tractor road crossings of Class III watercourse may be constructed and used during the winter period if conditions are dry (page 32).

The THP states that roads and landings will be "hydrologically disconnected from watercourses and lakes to the EXTENT FEASIBLE" (page 21). This wording shows that the applicant cannot guarantee that erosion into waterways will not occur, therefore they cannot ensure that water quality will not be adversely impacted. In addition, the inability to actually monitor the effects of winter operation on water quality underscores the need to limit operation to dry months.

As noted in our comments above, it is challenging for a field employee to accurately judge the conditions of the soils under winter conditions, and it is also unlikely that a timber operator would be able to judge whether or not the sediment deposited in streams has increased turbidity to unacceptable levels or whether the sediment visually observed has exceeded water quality standards.

Because CAL FIRE has a legal responsibility to protect water, it is important for CAL FIRE to ensure that regulatory requirements related to winter conditions are verified by either some measurement standards that can be assessed for accuracy, or that the determination for soil conditions or turbidity in streams be assessed by a third party with neutrality CSERC respectfully presses for CAL FIRE to avoid approving winter season operations based entirely on unsubstantiated claims by project operators that their operations are not affecting water quality.

Road conditions, skid trail conditions, and other areas across the project sites will vary widely in terms of soil saturation due to slope, exposure, etc.. Some soils (such as on north or east-facing slopes) may be saturated, while others (drier south-facing slopes) are not, making it challenging to avoid saturated conditions that are likely to produce significant sediment discharge. Therefore, our Center continues to oppose allowing timber operations during the winter period - but if those are nevertheless approved, we ask for the following.

Either winter operations should be denied or the Director should require a neutral party to judge road conditions, soil saturations, and to the extent feasible to monitor the turbidity of streams on a regular basis during rain events -- both during operations and following timber operations. This will provide actual data that would potentially reveal whether water quality standards are indeed being met.

Response to Concern #1:

The Forest Practice Rules allow for an RPF to either utilize a standard Winter Period Operating Plan, or to come up with a prescriptive Winter Period Operating Plan (WPOP) that would provide equal protection to the environment and to the quality and beneficial uses of water. The WPOP prescribes timber operations that will and will not be allowed during the winter period. It is well known that, due to California's Mediterranean climate, many winters can have extended drought periods where rain does not fall for a month or more at a time.

CFPR require that the timber operation will not result in a change to water quality nor the beneficial uses of water. An approved WPOP must follow strict mitigations to avoid impacts to water quality, turbidity standards, basin plans or the beneficial uses of water. All the following rules in this regard are in effect.

- 14 CCR 954.5, Servicing of Logging Equipment, Disposal of Refuse, Litter, Trash and Debris
- 14 CCR 954.6, Waterbreaks
- 14 CCR 954.8, Tractor Road Watercourse Crossing
- 14 CCR 956, Intent of Watercourse and Lake Protection
- 14 CCR 956.2, Protection of the Beneficial Uses of Water and Riparian Functions
- 14 CCR 956.3, General Limitations Near Watercourses, Lakes, Marshes, Meadows and Other Wet Areas
- 14 CCR 956.4, Watercourse and Lake Protection

- 14 CCR 956.7, Reduction of Soil Loss

Ongoing site inspection occurs from CAL FIRE Area Foresters to ensure the correct application of the rules are being followed are year-long. As an example, a quick review of the 4-19-00007-CAL and 4-14-026-CAL, Inspection Reports by the CAL FIRE Area Inspectors revealed the following on a Sierra Pacific Industries THP:

> 12/20/2019, 4-19-00007-CAL, CAL FIRE Inspector Whitson: *Operations were active in four evenaged units. Fulton Trucking was conducting skidding and loading operations in unit 630 and was falling and preparing to skid and load out of unit 629. Fray Logging was conducting falling, skidding and loading operations in unit 627. Sutton Logging was active in unit 623 where falling, skidding and loading operations were occurring. I walked portions of all active units, and observed ground conditions were ideal for operations. The units were slightly wet on the surface, but dry dirt was present just below the surface. All active operations were being hauled on rocked roads, and no issues were observed though the area was partially covered in snow. SPI Forester Steve Kafka was present on site and we discussed the landowners plan to continue logging off of rocked or paved roads as long as unit conditions allowed. No violations were observed during this inspection*
>
> 1/14/2021, 4-12-026-CAL, CAL FIRE Inspector Whitson: *This inspection was initiated by the forester administrating the THP. He wanted to inspect four Class Three Watercourses mapped on the harvest area. Each terminated above Love Creek Road, and he wanted to downgrade them to swales. I inspected all four. Each has an area which is incised, but travels downslope to a gentle grade where the channels dissipate and there is no longer a defined bed and bank. After examining each, I notified the forester I supported downgrading each.*
>
> *During this inspection the LTO and I examined the spur road which had been saturated during the previous visit. The road is drying out, and the LTO does not plan to use the road for several days. After walking the road, I notified the LTO I saw no potential for sediment to access a watercourse. Given this, I felt the LTO could use the road when needed even in the present state.*

While the extensive rules listed above are always in effect, the WPOP contains provisions that are designed to protect the quality and beneficial uses of water. The definition of "saturated soils", and "hard frozen conditions" applies to every area of the plan that is deemed to be operable during the winter months. Just because one area of the project may be sufficiently dry for winter operations, it would not be permissible to declare all areas of the project in acceptable condition given the microclimate, aspect, slope and elevational differences that are going to be found on a THP area.

The plan also contains soil stabilization measures to treat bare areas within the WLPZ within Item # 18, THP page 24. Specific Winter Operations are discussed in Item #23, THP page 30. The WPOP (found within Item #23) includes several limitations required by the California Forest Practice Act and Rules (CFPR) that are designed to prevent sediment discharge into

watercourses. The Department finds that, if followed as prescribed, the provisions in the WPOP plan will protect the quality and beneficial uses of water.

> ***Significant Sediment Discharge*** *means soil erosion that is currently, or, as determined based upon visible physical conditions, may be in the future, discharged to watercourses or lakes in quantities that violate Water Quality Requirements or result in significant individual or cumulative adverse impacts to the beneficial uses of water. One indicator of a Significant Sediment Discharge is a visible increase in turbidity to receiving Class I, II, III, or IV waters.*

The use of the phrase "visible increase in turbidity" in the above excerpt from the CFPR was designed by the California Board of Forestry and Fire Protection (BOF) to make it easier for a timber operator or timberland landowner to determine when it is inappropriate to continue with winter operations without needing to involve a neutral party to inspect the work area, or use measuring instrumentation.

As of January 1, 2015, all roads within Timber Harvest Plans must be hydrologically disconnected to the extent feasible. The 2015 Road Rules package contains a set of comprehensive revisions to the construction, reconstruction, maintenance and use of logging roads, and are designed with stringent water quality protections. CAL FIRE finds that the rules along with the measures contained in the WPOP of the THP combined with our ability to enforce these provisions on-site, at our convenience, will mitigate the fact that the plan has WPOP provisions. Protection of the quality and beneficial uses of water is a requirement of the rules of the BOF.

CAL FIRE’s observation is that SPI normally does not operate during wet periods in the winter period. In many cases, landowners will operate early in the winter period before the winter rains set in or late in the season when the winter rains end prematurely.

As described in the PHI attachment, "THP 4-21-00047-TUO (Cobbler) Public Comment and Responses", the Inspector wrote:

> *Non-compliance with the THP is considered a violation of the Forest Practice Rules. Field operations and conditions are routinely inspected and monitored for compliance with all Forest Practice Rules by CAL-FIRE inspectors throughout the life of the THP. This includes evaluating site conditions for timber operations during the winter period.*
>
> *The plan states that operations (including site prep) may not occur when saturated soil conditions may lead to significant sediment discharge. Erosion control requirements apply to site prep operations just as they do with all other forms of timber operations. Therefore, item 5 of the WPOP on page 33 applies. The plan EHR map shows High EHR ratings in cable units only; therefore, mechanical site prep is not allowed. During PHI and previous inspections throughout the ownership site prep operations have been evaluated. To date, no violations were observed related to site prep during the winter period.*

100% hydrologic disconnection of road and landing surface flows cannot be guaranteed. As a road crosses a watercourse, there will typically be a segment between the 2 disconnects that is hydrologically connected. The intent of the Forest Practice Rules is to minimize connectivity of surface flows. 14 CCR 963.5 (a) states that Logging Roads and Landings shall be disconnected from Watercourses and Lakes "to the extent feasible." Therefore, the practice is in compliance with the Forest Practice Rules.

The Department has not found substantive evidence of probable significant adverse cumulative impacts to beneficial uses of water from its overall review provided in the THP along with documentation from other past projects within the watershed assessment area and in consideration of any information provided in public comments regarding this concern.

Concern #2: Herbicide Use

The THP asserts that the actual use of a particular herbicide is not certain for this THP (page 213), however, SPI consistently applies herbicides whenever desirable in site preparation and reforestation treatments.

Response to Concern #2:

The U.S. Environmental Protection Agency regulates pesticide use nationwide and has exclusive authority over pesticide labeling. Use of a pesticide is limited to the applications and restrictions on the label, and the label restrictions are legally enforceable. The California Department of Pesticide Regulation (DPR) regulates pesticides within the State of California and has legal authority to adopt restrictions on pesticide use going beyond the regulations of the U.S. Environmental Protection Agency. 7 U.S.C.A. Sec. 136v. DPR operates with extensive authority in the California Food and Agricultural Code and in the California Code of Regulations.

Under California law, pesticide products must be registered by DPR to be sold and used in California. Before a substance is registered as a pesticide for the first time, DPR conducts a thorough evaluation. If DPR determines that further restrictions need to be placed on the use of a pesticide product to mitigate potential adverse effects including human health effects and environmental effects, DPR classifies the pesticide as a restricted pesticide, and individual applications need a permit from the county agricultural commissioner. After a pesticide is registered for use in this state, DPR has an ongoing obligation to review new information received about the pesticide that might show new problems beyond those identified in the registration process. Where the review of new information shows that a significant adverse impact has occurred or is likely to occur, DPR is required to reevaluate the registration.

DPR operates a statewide program of regulating pesticides and is the lead agency for regulating herbicide use under CEQA. DPR has the greatest authority of any state agency for analyzing and regulating herbicide use. Further, DPR acts before any other state or local agency can act because a herbicide product must be registered by DPR before it can be used at all. This lead agency role was confirmed in *City of Sacramento v. State Water Resources*

Control Board (3d Dist, 1992) 2 Cal.App.4th 960, for DPR's predecessor in regulating pesticides.

DPR's program for regulating pesticides was certified by the Secretary of the Resources Agency as a functional equivalent program under Public Resources Code section 21080.5 in the same manner as CAL FIRE's program of regulating timber harvesting was certified. 14 C.C.R. Sec. 15251(i). Because the program is certified, DPR does not prepare environmental impact reports (EIRs) but prepares other documents in the place of EIRs. P.R.C. sec. 21080.5(d)(3). DPR's registration process takes into consideration that most herbicides will be used statewide. Because the registration evaluation process considers use of a herbicide in a broad area and in a variety of conditions, the documents are the functional equivalent of a program EIR for each pesticide. Site specific application and use of restricted pesticides is evaluated by the county agricultural commissioner during its review of applications for restricted materials permits. Not all pesticides are restricted, and only restricted pesticides require a permit from the county agricultural commissioner, except for a pesticide that DPR has not designated as restricted, the commissioner can require a permit for its use if the commissioner makes a finding that the pesticide will present an undue hazard when used under local conditions.

When posting for public comment its proposed decision to register a new pesticide product and in approving the Public Notice for registration of a pesticide, DPR makes a finding as to whether the pesticide would cause a significant effect on the environment. Because DPR is the CEQA lead agency, this determination is binding on CAL FIRE. P.R.C. sec. 21080.1, 14 C.C.R. 15050. Accordingly, if a DPR-registered herbicide will be used in accordance with the directions and restrictions on the pesticide product label and any other restrictions established by DPR, CAL FIRE is required to find that the use will not have a significant effect on the environment unless there is new information showing significant or potentially significant effects not analyzed by DPR. As a responsible agency, CAL FIRE is barred from repeating the environmental analysis conducted by the lead agency. Because the use of a DPR registered herbicide would not have a significant effect on the environment, CAL FIRE is not required to analyze the use in the THP.

Herbicide use in the general location of a THP may be either a part of the THP or a separate but related activity that is not controlled by the THP. Where the herbicide use is described in the THP as an integral part of the timber operations, CAL FIRE will need to review the herbicide use and its possible environmental effects. CAL FIRE will determine whether the proposed use would be consistent with the label and the registration limitations and whether DPR's lead agency determination of significance will still apply. CAL FIRE will also need to check for significant new information showing changes in circumstances or available information that would require new environmental analysis. Significant new information should be referred to DPR for that department's analysis as part of its ongoing evaluation program. CAL FIRE reviewers should look for simple and practical ways to avoid or mitigate potential new significant effects on the environment. Effects of herbicides proposed as part of the THP would be considered direct effects of the THP.

CAL FIRE believes that where herbicide use is related to the THP but not a part of the THP itself, the environmental effects would be regarded as indirect effects of the THP. The landowners may have ongoing management activities that may occur before a THP is approved, during operation of the THP, and after expiration of the THP when CAL FIRE's inspection authority has lapsed. The use is subject to independent, intervening decisions of the timberland owner, a pest control advisor, and in the case of restricted herbicides, the county agricultural commissioner, and these independent decisions may lead to no herbicide use at all or a use differing from predictions in a THP. CAL FIRE would not know whether in fact the timberland owner would use herbicides at all, which ones the owner may use if any, what restrictions the pest control advisor may recommend, and, in the case of restricted herbicides, what conditions the county agricultural commissioner may impose. Outside of the THP, CAL FIRE has only general information about possibilities. Even if the timberland owner provides herbicide use plans to CAL FIRE with a THP, the use plans may well be changed by the county agricultural commissioner if the timberland owner intends to use a restricted herbicide.

The effects are generally not cumulative impacts because herbicide uses related to different THPs are separated in time and distance so that their individual effects do not reinforce or interact with each other. Use may occur a year or two before a THP begins, then possibly two to five years after operations are complete to reduce competition with small seedlings, or later to release the young trees from competition with brush.

Food and Agricultural Code section 13152(c) requires DPR to maintain a statewide database of wells sampled for pesticide active ingredients. State of California agencies are required to submit results of well sampling to DPR. DPR also conducts well sampling for pesticide residues. To date, the database contains information on 272 individual wells that were sampled and found to have residues of atrazine. DPR investigations of these reports indicate that the residues appear not to be associated with silvicultural activities. DPR has not conducted, nor has it received reports of, systematic investigations of wells used for production of forest products.

The project proponent has proposed use of herbicides in accordance with Federal and State labeling and under the CEQA certified regulatory program administered in California by the Department of Pesticide Regulation (DPR). The County's agricultural commissioner oversees portions of the DPR's functional equivalent program and is designated as a state agency for the purposes of certification (3 CCR 6100(a)(7)). Detailed records are kept on any pesticide application. This information is tracked by DPR and is available to the public.

Prior to commercial application of any herbicides proposed in the plan, SPI must comply with California's DPR process that requires additional site specific analysis. The analysis takes the form of a written recommendation for herbicide use prepared by a licensed Pest Control Advisor (PCA). SPI must use contractors that are supervised by Licensed Qualified Applicators. SPI works with all contractors to ensure applications are conducted in a professional manner that strictly follows all regulatory and licensing requirements.

CAL FIRE has evaluated the potential herbicide use. We have concluded that adherence to State and Federal laws pertaining to certifications and operations will prevent significant effects.

Concern #3: Watercourses

Watercourses are not only proposed in Class I - III through Griswold Creek, Skull Creek and other unnamed tributaries, but treatments within watercourses are also proposed to occur in affecting springs and seeps.

Our Center asks that all wetland areas be required to be avoided, and that a no-mechanical equipment buffer is provided around the seeps and springs to avoid impacts to these sensitive areas, in addition to having watercourse protection zones for Class I-III in order to increase the protection of FYLF

Response to Concern #3:

The THP does include protection measures for Springs and Wet Areas. Page 48 states, "Springs and wet areas, within or directly adjacent to harvest units shown on the Operations Maps, will be protected as per FPR 956.3(c) and (d)." These rules prohibit the use of mechanical equipment in wet areas and provide protection to vegetation bordering and covering wet areas.

> ***14 CCR 956.3(c)*** *The Timber Operator shall not construct or use tractor roads in Class I, II, III or IV Watercourses, in the WLPZ, marshes, wet meadows, and other wet areas unless explained and justified in the plan by the RPF, and approved by the Director, except as follows:*
>
> ***(1)*** *At prepared tractor road crossings as described in 14 CCR §§ 914.8(b), 934.8(b), 954.8(b).*
>
> ***(2)*** *Crossings of Class III Watercourses that are dry at the time of use.*
>
> ***(3)*** *At new and existing tractor road crossings approved as part of the Fish and Game Code process (F&GC § 1600 et seq.).*
>
> ***14 CCR 956.3(d)*** *Vegetation, other than commercial species, bordering and covering meadows and wet areas shall be retained and protected during Timber Operations unless explained and justified in the THP and approved by the Director. Soil within the meadows and wet areas shall be protected to the maximum extent possible.*

Springs and wet areas will either be incorporated in the Watercourse and Lake Protection Zones of adjacent watercourses or protected with an Equipment Exclusion Zone (EEZ). In both instances, mechanical equipment will be excluded from springs and wet areas.

The THP outlines protection measures for Foothill Yellow Legged Frog (FYLF) on page 60. This includes an assessment of potential FYLF breeding and non-breeding habitat and surveys of suitable habitat. Should a detection of FYLF occur, all vegetation and ground disturbing activities shall cease within 40 feet during the dry season and 130 feet during the wet season.

The standard WLPZ protection measures and the protection measures proposed for springs and wet areas together with the FYLF protection measures provides sufficient measures to avoid impacts to FYLF.

Concern #4: Water Drafting

Water drafting guidelines Section II Item 38 on page 70 state that "Water shall be drafted at a rate not to exceed 250 gallons per minute". On page 104 the THP reads "Water shall be drafted at a rate not to exceed 200 gallons per minute".

CSERC asks that this inconsistency between the two amounts (250 gallons per minute vs. 200 gallons per minute) be addressed to avoid a reduction in stream flows that will impact aquatic resources downstream and provide consistent guidelines.

Should there be a drought, any removal of water from streams will further stress aquatic animals. Griswold Creek is a fish-bearing, Class I watercourse. Other waterways near the project area have foothill yellow-legged frogs and Sierra Nevada yellow-legged frogs (pages 59-60). To avoid detrimental effects to amphibian habitats, fish-bearing and non-fish bearing streams, SPI should be required to comply with the same water drafting standards as the Forest Service. BMP 2.5 that is relative to logging operations on lands within the Stanislaus Forest.

Response to Concern #4:

The inconsistency between page 70 and 104 was addressed and corrected during the review process. The plan was revised to clarify the drafting rate shall not exceed 250 gallons per minute.

BMP 2.5 is required for Federal operations, but CAL FIRE does not have the regulatory authority to require BMP 2.5 on non-federal timberlands.

Water drafting is typically required when timber operations occur during the dry summer months for dust abatement on haul roads. Dust abatement serves many important functions like reducing dust levels to protect the beneficial uses of water by reducing small loose material on the road surface that may runoff into watercourses. Dust abatement is also an important tool for public safety. Several of the haul roads are open to the public and through dust abatement, visibility on the road will be clearer, allowing the public to see traffic associated with the timber operations. Finally, dust abatement protects air quality by reducing particulate matter and dust particles from entering the atmosphere.

The RPF has provided information regarding water drafting activities associated with timber operations on pages 70 and 104, echoing many of the suggestions presented by the Commenter.

The THP review process is to be used to meet Department of Fish and Game CEQA review requirements. A 1611 addendum is attached at the end of Section II, and supporting information and analysis in Section III.

There is a winter operating plan for this THP which allows for timber operations to occur during the winter during extended dry periods. Typically, water drafting is not required during the winter period because soil moistures levels are higher in the winter compared to the dry summer season.

CAL FIRE has found the plan in compliance with the Forest Practice Rules and Act. Additional protection will be in place through the requirements of Fish and Game Code.

Concern #5: Raptor Protections

There are four known historic Northern Goshawk nest sites within the project area.

Our Center strongly asserts that pre-operational surveys should be required within and around the proposed harvest area in each location where previous sightings have been identified in order to ensure that any nesting CA Spotted Owl or Northern Goshawk is identified and that Goshawks are not disturbed.

Requiring pre-operational surveys has far higher potential to locate birds prior to disturbance instead of waiting until after operations have started and then expect that raptors can then be discovered during timber operations.

If pre-treatment surveys for nesting raptors of concern and other nesting birds cannot be conducted in the treatment area by a qualified biologist, then timber operations should not be allowed to occur during nesting season (between February 15 through September 30 to allow young time to fledge.

CDFW provided comments that are important for protection of at-risk raptors:

"Section II Item 32(c) states that the protection zones for California spotted owl activity centers will be made available to CAL FIRE prior to annual operations commencing in unharvested areas of this THP (page 62). CDFW recommends that we also receive this information prior to annual operation commencement.

Section II Item 32(c) includes measures for non-listed raptor species and states that these are voluntary safeguard measures, and therefore, not an enforceable condition for the Project. CDFW recommends language that describes these measures as "voluntary" are removed. "

Our Center provides strong support of the comments submitted by CDFW for this specific THP. However, we want to also re-emphasize our disagreement with the legal and scientific adequacy of the SPI-USFWS HCP "take permit" that USFWS has given to SPI for their timber operations. Our center urges that the Director respond to the specified concerns described by CDFW staff in order to better protect nesting raptors and other wildlife species.

Response to Concern #5:

The KMZ file which shows the current location of CSO protection areas is available to CDFW. When protection measures are included in a THP they are enforceable conditions of the THP. The term voluntary refers to the nature that protection measures are voluntarily provided for non-listed species. When protection measures are included in an approved THP, the protection measures are fully enforceable and are a requirement of the THP.

SPI's HCP is part of an application for a Northern and California Spotted Owl incidental take permit that was developed in deliberation with the USFWS, CDFW, and U.S. Forest Service. It describes the anticipated effects of the proposed taking; how those impacts will be minimized, or mitigated; and how the HCP is to be funded. Although the CSO is not currently a listed species, conserving species before they are in danger of extinction, or are likely to become so, can also provide early benefits and prevent the need for listing.

On page 178 of the THP, the discussion for Raptors begins. SPI has conducted all the appropriate database searches to determine if known raptors are located within the plan area and within the biological assessment area. The plan also elaborates about the protection measures given to listed and non-listed raptors and a detailed discussion is on page 180 of the THP. The THP has protection measures for listed raptors on page 58, Item # 32, and for non-listed raptors on page 62, Item # 32.

On page 62, protection measures for CSO are found and the CSO is discussed in detail beginning on page 182. The THP mentions several historic locations for CSO. Species protection and identification for CSO and other listed and non-listed raptors is discussed in the plan. The THP discusses general survey efforts that will be made for raptor species. There is no provision within the rules of the BOF to provide restoration of habitat for CSO. The species is not currently listed under either the federal or state endangered species acts. The plan contains protections for habitat for any non-listed raptor species, which includes CSO, and these procedures are more than BOF rule requirements. CAL FIRE supports these measures as a preventative way to keep the species from being adversely impacted.

The Northern Goshawk is afforded the same protections as the Listed Raptors protections measures, as described on page 58, Item # 32.

In regards to surveys, on page 75 of the HCP, pre-operational surveys have been conducted since 1990 for CSO, which have been voluntarily accomplished by SPI, and will now be required as part of the HCP.

As described in the PHI attachment, "THP 4-21-00047-TUO (Cobbler) Public Comment and Responses", the Inspector wrote:

> *Protection measures in the plan are in compliance with the Forest Practice Rules. Evaluation of the plan and surrounding area shows that potential habitat exists within the Biological Assessment Area.*

The Department has determined the plan is in conformance with the rules and significant impacts are not expected.

Concern #6: Amphibian Protections

Foothill yellow-legged frogs and Sierra Nevada yellow-legged frogs are known to be present adjacent to the project area (page 59-60). Foothill yellow-legged frogs (FYLF) are known to occur about 2.0 miles to the southwest of the THP area (page 60). If a positive detection occurs for FYLF *during surveys or at any time during timber operations all vegetation and ground disturbing operations shall cease within adjacent suitable habitat and a buffer of 40 feet of the observation during the seasonal dry period and within 130 feet during the seasonal wet period* (page 60). Sierra Nevada yellow-legged frogs (SNYF) are known to occur 0.25 to 1.0 mile to the east and northwest of the THP area (page 59). If positive detections occur for SNYF *during surveys or at any time during timber operations all vegetation and ground disturbing operations shall cease and a no-operations buffer within 25 meters of the observation and adjacent suitable habitat shall occur* (page 59).

Our Center provides support of the comments submitted by CDFW regarding FYLF and SNYF protection measures:

Section II Item 32(a) states that the THP area has an elevation range of about 4,350 to 5,950 feet and that the upper elevation range for the foothill yellow-legged frog (FYLF) in the Sierra Nevada is generally considered to be 4,500 feet (page 60). However, according to A Status Review of the Foothill Yellow-legged Frog (Rana boylii) in California, individuals are known to occur from sea level all the way up to 6,400 feet in elevation (CDFW 2019). In addition, FYLF detected in Skull Creek less than a mile from the THP area were found at approximately 5,400 feet in elevation. Please update the language in Section II Item 32(a) and Section IV to reflect the potential for suitable habitat within the THP area.

Section II Item 32(a) states that if a FYLF is detected, all vegetation and ground disturbing operations shall cease within adjacent suitable habitat and a buffer of 40 feet of the observation during the seasonal dry period and within 130 feet during the seasonal wet period (page 60). CDFW recommends that the no-disturbance 40-foot buffer during the dry period and the no-disturbance 130-foot buffer during the wet period is also established around the adjacent potential habitat.

Response to Concern 6:

The THP was revised on page 60 during the review process in response to CDFW's elevation range question. The THP outlines protection measures for Foothill Yellow Legged Frog (FYLF) on page 60. This includes an assessment of potential FYLF breeding and non-breeding habitat and surveys of suitable habitat. Should a detection of FYLF occur, all vegetation and ground

disturbing activities shall cease within 40 feet during the dry season and 130 feet during the wet season. CDFW reviewed and evaluated these protection measures during the review process. Impacts to FYLF are not expected.

Concern #7: Need for Habitat Protection for the Pacific Fisher

The proposed project, along with nearby past, future, and current projects, significantly reduces forest connectivity (especially of mature conifers) which thus reduces suitable habitat for any fishers that may potentially be present within the project area. The proposed THP assumes that project activity in this region has no detectable effect on sensitive species such as the American Marten and Pacific Fisher.

Unless protocol-consistent surveys are first conducted in the project area, the THP cannot legally base wildlife impact determinations upon the unconfirmed assumption that a rare animal is not present. CSERC urges that both photo-detection surveys and track plate surveys be required prior to project operations.

Habitat fragmentation is one of the main threats to the fisher according to CDFG's "A Status Review of the Fisher (*Martes pennanti*) in California (2010)," *the fisher's ability to survive in areas that have had various silvicultural treatments depends on the size, distribution and type of those operations*. *"Fishers are negatively associated with clearcuts and habitats that are nearly or completely surrounded by clearcuts (Rosenberg and Raphael 1986) (CDFG, 2010)."* Throughout this Report, fisher mortality was directly correlated with current timber harvesting practices place is fisher habitat.

Science has shown that fisher mortalities increase in heavily harvested areas due to the reduction of habitat quality *(Kelly 1977; Weir and Harstad 1997; Simpson Resource Company 2003).* The fisher, especially females, have small home ranges, making them more susceptible to predation in areas with fragmented habitat (*Buck et al, 1994:373-374).*

The proposed project, along with past and upcoming future projects in the Upper Beaver Creek watershed, which flows into the North Fork of the Stanislaus River watershed, continues to reduce forest connectivity and suitable habitat for any fishers that may potentially be present within the project area now or in the near future. Without any scientific basis for assessing whether or not fishers may be present or absent in the plan area, SPI cannot accurately conclude that their evenage treatments will not harm the fisher.

It has been well documented that fishers are forest specialists that prefer late seral forests for denning and resting. Late seral forest characteristics such as dense canopy cover, large diameter trees, large snags, large down logs, and understory vegetation of late seral forests for foraging are critical for the fisher survival. *Such habitats as described above can be considered the Department's preliminary assessment of essential habitats and habitat elements for the fisher (CDFG).*

> ***The fisher is one of several species selected to illustrate conservation issues with the Sierra Nevada and Cascade bioregion. Portions of the account from the 2007 CDFG report are as follows: "...the status of the Pacific fisher is one indicator of the status of forest condition of the Sierra, particularly the old-growth component" (CDFG 2007). On June 15, 2020 the Southern Sierra Nevada DPS of fisher (Pekania pennanti) (SSN DPS) was added as an endangered species to the List of Endangered and Threatened Wildlife in title 50 of the Code of Federal Regulations at 50 CFR 17.11(h).***
>
> **Fish and Wildlife Services basis for action:**
> ***The implications for the DPS's status were loss and fragmentation of habitat...(i.e., loss of snags and other large habitat structures on which the species relies), climate change, and tree mortality from drought, disease, and insect infestations (Fish and Wildlife Services).*** **The Conservation of the Pacific fisher is dependent upon the approaches to and success of restoring healthy and diverse forest ecosystems along the Sierra range" (CDFG 2007:301).**

This THP will continue to exacerbate the loss of fisher habitat and is not responsive to the latest science. The lack of fishers found on SPI land should at least in part be considered to be an indicator of the poor condition of the forest habitat found on their land. This broad general THP area is within potential travel distance of known fisher occupied habitat in Yosemite Park and the southern eastern portion of the Stanislaus Forest.

Accordingly, as a CEQA equivalent planning assessment, this THP should reasonably mitigate for potential significant impacts that would occur if this THP reduces suitable fisher habitat by removing large trees, large snags, large down logs, and closed canopy forest conditions.

CSERC asks that either SPI be required to undertake furbearer photo-detection (or track plate) surveys consistent with scientific protocols within all project units within the plan area prior to any approval of the THP, or that SPI be required to retain fisher movement corridor areas with a minimum 60% canopy cover that should retain all large snags (16" dbh>), large diameter living trees (24" dbh>), and all large diameter down logs (20"dbh) ; along with a 200' wide swath across the project units acres so as to ensure there is suitable habitat for fisher movement -- not just at the present, but into future decades as the tree plantations gradually evolve into young forest stands.

Response to Concern #7:

It is noted the area proposed for management under the THP is not currently occupied by the Pacific Fisher.

As noted in the June 10, 2015 Memorandum to Sonke Mastrup, Executive Director of the California Fish and Game Commission (Status Review of Fisher) from the Director of the California Department of Fish and Wildlife on page 25 of the review:

> *“Despite a number of extensive surveys using infrared-triggered cameras conducted by the Department, the US Department of Agriculture Forest Service (USFS), private timber companies, and others since the 1950s, no verifiable detections of fishers have been made in that portion of the Sierra Nevada bounded approximately by the North Fork of the Merced River and the North Fork of the Feather River (Zielinski et al. 1995, 2005).”*

In the past, California specific literature and studies have indicated that the Pacific fisher is currently not found from the Cascade and Sierra Nevada Ranges from the Feather River south to the Tuolumne County area. This would mean that there are hundreds of thousands of acres of forested land in California, which includes National Park lands, National Forest lands and wilderness areas, small private landholdings, etc. wherein there has been no finding of Pacific Fisher in recent times. A published CDFW report, “A Status Review of the Pacific Fisher (Martes pennanti) in California” from February 2010 states:

> *"There is little empirical evidence of fisher inhabiting this gap in the Sierra Nevada range, although the Department believes they did at some level, and we are largely relying on observation data and trapping reports and distribution accounts described by Grinnell et. al (1937). Thus, as much as 43 percent of the historical range is either (1) not inhabited by fisher now; 2) not part of the historical range; or 3) fisher are extremely rare in this area. In this geographical area, there have been a handful of reported observations since the early 1900s. Overall, the Department concludes that there has not been a substantial change in fisher population distribution since the Grinnell period in the early 1920s, and that natural recolonization of fisher to a former range in any detectable number has not occurred"*. The CDFW report goes on to report on preliminary genetic coding data that is suggesting that "gap" in fisher distribution may indicate "separation of the northern and southern populations for thousands of years."

It is apparent from the documentation that this absence of fisher in the "gap" is science-based and not related to the number of surveys that have been completed on private industrial forest lands.

The June 10, 2015 Memorandum and status review of the Pacific Fisher is the latest document from CDFW. The Executive Summary discusses the current range and status of the species in references to land ownership below:

> *Within the fisher’s current range in the state, greater than 50% of the land base is administered by the US Forest Service (USFS) or the National Park Service. Private lands within the NC ESU and the SSN ESU represent about 41% and 10% of the total area, respectively. Comparing the area assumed to be occupied by fishers in the early 1900s to the distribution of contemporary detections of fishers, it appears the range of the fisher has contracted substantially. This difference is due to the apparent absence of fishers from the central Sierra Nevada, most of the northern Sierra Nevada, and portions of the north Coast Ranges. This apparent long-term contraction*

notwithstanding, the distribution of fishers in California has been stable and possibly increasing in recent years.

Analysis of terrestrial habitat within the THP also serves to evaluate the potential pre-harvest and post-harvest habitat, although not specific to Pacific fisher. Terrestrial habitats considered include hardwood cover, presence of snags/dens/nest trees, amount of large woody debris, presence of multi-story canopy, road density, presence of late seral characteristics and late seral stage forests. The THP discusses these resources, and has determined that the operations as proposed will not significantly affect assessment area.

Regarding Pacific fisher, CAL FIRE has considered that, because of this harvest, there will continue to be a variety of stand conditions exist within and adjacent to the THP area and will not be significantly changed by the implementation of the THP. Since Pacific fisher is currently not found on or near SPI ownership in the Cascade and Sierra Nevada Ranges from the Feather River to south of the Tuolumne County area, no additional mitigation is required under CESA.

As described in the PHI attachment, "THP 4-21-0047-TUO (Cobbler) Public Comment and Responses", the Inspector wrote:

Item 38 of the plan cites habitat retention objectives geared towards wildlife. This includes Pacific Fisher. The prescription selects for the retention of large conifer and hardwood species with cavities, basal hollows, and re-formed tops. During PHI it was observed that previously harvested areas are well stocked with regenerating conifers. Both aggregated and dispersed retention of wildlife trees was also observed throughout the watershed in these areas where harvesting took place. Watercourse and Lake Protection Zones where harvesting had taken place were observed to contain species of size and type similar to the preharvest stand. When combined, these areas appear to provide mitigation for the concern of fragmentation. Within the THP area itself, trees marked for harvest in these WLPZ's appear to comply with both the Forest Practice Rules and the THP's Retention guidelines.

In 2016, SPI entered into a Candidate Conservation Agreement with Assurances (CCAA) for the Pacific Fisher. A CCAA description can be found at the following web location:

https://www.fws.gov/endangered/esa-library/pdf/CCAs.pdf

Retention levels described under Item 38 are in part to meet the requirements of the Fisher CCAA.

After careful review of the information provided both in the record and obtained through additional research, CAL FIRE has determined that operations as proposed are not likely to create significant adverse and cumulative impacts to the species listed in the comment letter.

Concern #8: Cumulative Impacts

As noted in the first paragraph of these comments, this THP would allow for 212 acres of alternative prescription (evenage logging) similar to clearcut logging treatments. This will diminish the number of medium and large conifer trees in the project area and further convert unevenaged biologically diverse forest habitat into uniform, much more simplified and sterile habitat conditions as young tree plantations eventually grow into tree farm crops. The Project area has already been logged multiple times over more than a century and many times in recent years such as the past decade - e.g. 2010 Grizzly Meadow THP, 2016 Skull Knoll THP, and other projects. This area contains primarily second and third growth mixed conifer timber stands. All these projects have reduced canopy cover and degraded habitat for many wildlife species -- e.g. Pacific fisher, American marten, Northern Goshawk, Northern flying squirrel, and many more.

The Google Earth images below of this THP area and the surrounding area show how a checkerboard of clear-cuts already has SIGNIFICANTLY diminished mature forest habitat, created denuded or heavily disturbed watershed conditions, and degraded scenic, watershed, and soil resources. Approval of this THP as is currently proposed will add to the continued degradation of watershed and forest health.

With these comments, CSERC fully recognizes SPI's right to manage and operate treatments on the company's private lands in a manner that complies with Forest Practice Rules and other applicable regulatory requirements. However, due to the cumulative negative impacts of this project combined with not only recent logging operations by SPI within the general project area over the past two decades, but also with the wide-ranging conversion of mixed, unevenage forest habitat into sterile young even-age tree plantations across adjacent areas, CSERC strongly asserts that it is inexcusable for CAL FIRE to ignore the cumulative effects of all of these additive impacts.

The Director needs to consider the significant impact of all of this THP and all the adjacent even age treatments to the project area. This THP is not simply one effect, but it is part of a series of cumulative effects from SPI forest treatments that have taken place and continue to take place throughout the overall forest region overlapping with this specific THP project area.

Response to Concern #8:

Submitted THPs are reviewed by the Director to determine the potential for significant adverse cumulative impacts. Each plan is reviewed considering past, present and foreseeable future projects, and how these environments have recovered and responded to site-specific mitigations with the application of the CFPR.

Per the CFPR, the Director is required to examine the cumulative impacts of timber harvests and related projects on a watershed assessment area (WAA) of approximately 10,000 acres, along with a biological assessment area designed for the consideration of wildlife. Within the

CFPR, Technical Rule Addendum No. 2 establishes the framework for the assessment of cumulative impacts. If impacts are to occur, they will happen on the ground within the WAA and may not be detectable on aerial imagery. That is why it is necessary to examine the area on-the-ground, via a Pre-Harvest Inspection (PHI) with Interagency Review Team representatives, and analyze the findings in the THP.

With respect to the view from Google Earth or other aerial views, this does not reflect the complete consideration when assessing cumulative impacts. CAL FIRE finds that the overhead view from such a distance is unable to discern accurately the amount of regrowth that has occurred, especially where some of the vegetation features such as brush, grass and forbs are small, when compared to neighboring retention overstory trees that show up on the aerial images. It is not especially easy to pick out the detailed features of recovering vegetation, individual or grouped retention trees, or seedling growth from an aerial photo.

CAL FIRE utilizes either Geographic Information Systems (GIS) software, or its publicly available online “Forest Practice Watershed Mapper v2” application. These tools are utilized by Review Team staff to view the proposed operations to get an overview, and to determine if other rules pertaining to forest practices, such as maintaining the adjacency requirements for even-aged units or determining if proposed silvicultures are allowed under the CFPR, are being adhered to in plan proposals.

Confirmation of what is found in these tools occurs during on-the-ground inspections, active harvesting inspections, and post-harvest compliance. CAL FIRE relies heavily on observations made on-the-ground from inspectors. As described in the PHI attachment, "THP 4-21-00047-TUO (Cobbler) Public Comment and Responses", the Inspector wrote:

> *Evaluation of the plan and assessment area was done during PHI. It was observed in the field that consideration was given to all potential cumulative effects. Management practices appear to have given consideration to all resources including Watershed, Biological, Soil, Recreational, Visual, Traffic, Greenhouse gases, and Wildfire Risk. In areas where there could be potential for negative effects, recommendations were submitted.*

In 1999, SPIs option “a” adopted new standards for their even-aged regeneration harvest areas in which 2% minimum islands of trees would be retained in HRAs. The option "a" document demonstrated how the planned harvest will be projected to yield a continuously increasing harvest level over the planning horizon, and would result in increasing tree diameters over time as compared to the first decade starting point. The option "a" plan explained how the projected growth has been constrained by the required protection of "other forest values" such as watershed, scenic, and soil resources. It provided the Department with an analysis of long term sustained yield, as required by the CFPR, and has determined that even-aged management is the silviculture to achieve Maximum Sustained Production of high quality timber products. This management regime does not preclude SPI from ensuring that public trust resources are protected, and the 4-21-00047-TUO THP discloses the potential impacts described in Technical Rule Addendum #2, Cumulative Impacts Assessment

Guidelines. CAL FIRE finds that even-age regeneration harvest is consistent with the analysis done in the SPI option "a" sustained yield plan for SPI lands within the Southern Forest District.

CAL FIRE has concluded that the plan meets the requirements of the CFPR and is compliant with SPIs Option “a” plan, while taking into consideration the various public trust resources.

Concern #9: Wildfire Risk and Hazard

Cobbler THP consists of 380-acre timber harvest of which 212 acres is alternative prescription harvest. The alternative prescription harvest described is for all intent and purposes are clearcuts harvested in 20 acre groupings. The Cobbler THP area is located approximately one mile east of the South Grove of Calaveras Big Trees State Park and approximately six miles southeast of Dorrington, California in Tuolumne County. Should a wildfire occur as a result of this timber harvesting, The State park and the community of Chester would be immediately threatened, and has the potential of creating another Camp Fire, Paradise, California tragedy.

Sections IV, pages 193 -197 of the Cobbler THP (Wildfire Risk and Hazard) describes the THP as being in a very high fire severity hazard zone. Aside from the 123 acres of fuel breaks, the post-harvest stocking will consist of an even-age managed forest.

Given the extensive clearcutting and harvesting operations that have taken place in this area alone in the past 10 to 20 years, there are significant wildfire risks and hazards caused by the proposed project. There are a number of forest fire studies that show clearcut harvesting and subsequent even-age tree plantations leads directly to increase in the intensity and spread of wildfire

Timothy Ingalsbee of the Western Fire Ecology Center has found that commercial logging removes the least flammable portion of trees-their main stems or "trunks," while leaving behind their most flammable portions-their needles and limbs, directly on the ground. Untreated logging slash can adversely affect fire behavior for up to 30 years following the logging operations.

In addition, scientific studies have shown that the "overstory" tree canopy moderates the "microclimate" of the forest floor. This reduction of the tree canopy which occurs in clearcut, exposes the forest floor to increased sun and wind, causing increased surface temperatures and decreased relative humidity. This in turn causes surface fuels to be hotter and drier, resulting in faster rates of fire spread, greater flame lengths and fire line intensities, and more erratic shifts in the speed and direction of fires.

Small-diameter surface fuels (such as those even-age plantations younger than ten years) are the primary carriers of fire. Current fire spread models do not even consider fuels greater than three inches in diameter because it is mainly the fine-sized surface fuels that allows fire spread. Commercial logging operations remove large-diameter fuels which are naturally fire resistant, and replaces them with even-age plantations and

fire-prone small-diameter fuels. These timber plantations are usually comprised of densely-stocked, even-aged stands of young conifers that are extremely flammable and vulnerable to catastrophic fire effects.

On page 197, the PRF states that "altering the forest fuels through conversion, reduction and Isolation (i.e., even-age management) is the only proactive option available that can help reduce the potential rate of spread and intensity of large wildfires". This false assumption runs contrary to the known facts about the Camp Fire. Here, before reaching the town of Paradise, the Camp Fire had to first burn through more than 30,000 acres that ten years earlier, had burned and was salvaged logged (Butte Fire, 2008). These acres subsequently were restocked using even-age plantation trees. This fire raced through this logged area in a matter of minutes giving very little warning to residents of Paradise.

Currently, the State of California is facing a severe fire season. Should another Camp Fire occur here and destroy Dorrington, or severely burn Calaveras State Park, the responsibility of such a fire will fall directly on the shoulders of CALFIRE. It will be your failure to adequately address these fire risks, and hazards using the most current, peer reviewed studies. Accordingly, I recommend that you reject this THP until these fire issues can be addressed and corrected.

Response to Concern #9:

> *From the appointment of the first State Board of Forestry in 1885, to the creation of the first State Forester position in 1905, and the organization of the original California Division of Forestry in 1927, the Department of Forestry and Fire Protection (CAL FIRE) has protected the people, property, and natural resources of California. The Department's diverse programs work together to plan protection strategies for over 31 million acres of privately-owned wildlands, and to provide emergency services of all kinds throughout California.*
> ***-CAL FIRE 2019 Strategic Plan***

As an agency, CAL FIRE fulfills many roles to protect both the public and natural resources of our state. When it comes to operations that can impact both the natural environment and the public, CAL FIRE must review these proposals with an eye towards these two responsibilities. When it comes to a decision of whether to approve a plan, CAL FIRE must exercise professional discretion:

> ***14 CCR § 897 Implementation of Act Intent***
> ***(d)*** *Due to the variety of individual circumstances of timber harvesting in California and the subsequent inability to adopt site-specific standards and regulations, these Rules use judgmental terms in describing the standards that will apply in certain situations. By necessity, the RPF shall exercise professional judgment in applying these judgmental terms and in determining which of a range of feasible (see definition 14 CCR 895.1) silvicultural systems, operating methods and procedures contained in the Rules shall be proposed in the plan to substantially lessen significant adverse Impacts in the*

environment from timber harvesting. The Director also shall exercise professional judgment in applying these judgmental terms in determining whether a particular plan complies with the Rules adopted by the Board and, accordingly, whether he or she should approve or disapprove a plan. The Director shall use these Rules to identify the nature of and the limits to the professional judgment to be exercised by him or her in administering these Rules.

Requirements of Evaluation included in the Rules

The Forest Practice Rules recognize that Timber Operations have the potential to cause and contribute to the severity of fires. The need to protect property and natural resources from fire goes back to the founding of the original Board of Forestry in 1885. Fire prevention laws were the first regulations governing forestry in our state.

Current Forest Practice Laws contain significant detail on how operations are to be conducted to reduce or eliminate the chance that logging will cause a fire. Article 7 of the Rules cover the various methods of reducing fire risk and hazard, collectively called “Hazard Reduction”:

- 917, 937, 957 Hazard Reduction
  - 917.2, 937.2, 957.2 Treatment of *[Logging]* Slash to Reduce Fire Hazard
  - 917.3 Prescribed Broadcast Burning of Slash [Coast]
  - 937.3 Prescribed Broadcast Burning of Slash [Northern]
  - 957.3 Prescribed Broadcast Burning of Slash [Southern]
  - 917.4 Treatment of Logging Slash in the Southern Subdistrict
  - 957.4 Treatment of Logging Slash in the High Use Subdistrict
  - 917.5, 937.5, 957.5 Burning of Piles and Concentrations of Slash
  - 917.6, 937.6, 957.6 Notification of Burning
  - 917.7, 937.7, 957.7 Protection of Residual Trees
  - 917.9, 937.9, 957.9 Prevention Practices

A primary concern addressed in the Hazard Reduction Rules deals with logging debris left over after trees are harvested. Branches, leaves, and other materials not taken to a sawmill (called “slash”) must be treated in such a way that an increase in fire hazard does not occur, and to prevent the spread of forest-based insects and diseases. For example, the following standard practices shall be followed within the THP area to treat slash:

917.2, 937.2, 957.2 Treatment of Slash to Reduce Fire Hazard [All Districts]
Except in the [High-Use Subdistrict of the Southern Forest District,] Southern Subdistrict of the Coast Forest District and Coastal Commission Special Treatment Areas of the Coast Forest District, the following standards shall apply to the treatment of Slash created by Timber Operations within the plan area and on roads adjacent to the plan area. Lopping for fire hazard reduction is defined in 14 CCR 895.1.

- *Slash to be treated by piling and burning shall be treated as follows:*

- *•Piles created prior to September 1 shall be treated not later than April 1 of the year following its creation, or within 30 days following climatic access after April 1 of the year following its creation.*
- *•Piles created on or after September 1 shall be treated not later than April 1 of the second year following its creation, or within 30 days following climatic access after April 1 of the second year following its creation.*

- *All woody debris created by Timber Operations greater than one inch but less than eight inches in diameter within 100 feet of permanently located structures maintained for human habitation shall be removed or piled and burned; all Slash created between 100-200 feet of permanently located structures maintained for human habitation shall be lopped for fire hazard reduction, removed, chipped or piled and burned*

For this plan, the only adjacent public roads are Forest Road 5N42 and 5N10. Slash treatment will occur in portions of Unit FB4 adjacent to or within 100 feet of a public road. There are private roads within the THP area that are open for public use that will receive hazard reduction within 50 feet of the road.

In addition to these regulations for slash treatment, all timber operators are required to have equipment onsite to deal with any fires that start unintentionally. The requirements for the “fire toolbox” are contained in PRC §4428 and are subject to inspection by any CAL FIRE employee.

Furthermore, every Licensed Timber Operator is required to submit to CAL FIRE a Fire Suppression Resource Inventory that contains emergency contact information for each Licensed Timber Operator along with the number of personnel and types of equipment that can be used to suppress any fire. These operators can be called upon to assist CAL FIRE with emergency fire suppression in the area where they are operating, further adding to the resources that can be used during a fire.

In addition to the hazard reduction rules, operations proposed in this plan have additional benefits expected to reduce fire danger.

- Road brushing and maintenance: As part of the Timber Operations, existing roads will receive maintenance to allow for access for logging equipment. These operations ensure that roads used for operations are free of obstruction and can be used during the operations and in the future in the event they are required for fire suppression:

> ***923.1, 943.1, 963.1 Planning for Logging Roads and Landings. [All Districts]*** *Logging Roads and Landings shall be planned and located within the context of a systematic layout pattern that considers 14 CCR § 923(b), uses existing Logging Roads and Landings where feasible and appropriate, and provides access for fire and resource protection activities.*

Additionally, any time that burning permits are required (e.g. during the declared fire season), all roads and landings within the harvest plan area must be passable for use during an emergency:

> *963.6 (d) When burning permits are required pursuant to PRC § 4423, Logging Roads and Landings that are in use shall be kept in passable condition for fire trucks.*

- New road construction: In addition to the existing roads within the plan area, new seasonal roads are proposed to assist with harvesting. These roads will allow for additional access if necessary for fire suppression.

- Limits on access: New roads within the forest open the potential for unauthorized use by the public, increasing the potential that a fire may occur. The landowner maintains control over access to the plan area using locked gates to discourage trespass.

Maintaining access within the harvest plan area is consistent with the Tuolumne-Calaveras Unit Strategic Fire Plan to allow for rapid extinguishment of fires within CAL FIRE responsibility areas.

When it comes to evaluating the potential for the proposed plan to negatively impact wildfire risk and hazard, the Rules contain the following guidelines:

> **Excerpt from Technical Rule Addendum #2:**
> ***WILDFIRE RISK AND HAZARD***
> *Cumulative increase in wildfire risk and hazard can occur when the Effects of two or more activities from one or more Projects combine to produce a significant increase in forest fuel loading in the vicinity of residential dwellings and communities.*
> *The following elements may be considered in the assessment of potential Cumulative Impacts:*
> 1. *Fire hazard severity zoning.*
> 2. *Existing and probable future fuel conditions including vertical and horizontal continuity of live and dead fuels.*
> 3. *Location of known existing public and private Fuelbreaks and fuel hazard reduction activities.*
> 4. *Road access for fire suppression resources.*

The Rules specify that an RPF must evaluate potential impacts that could be caused by the project. Timber harvesting is not required to lower wildfire risk and hazard, although this is common from properly designed and implemented operations.

Evenage Management and Plantations Impact on Fire Hazard

The total acres proposed for evenage management is 212 acres. Thus, 212 acres of the THP area will be replanted. Item #14 of the plan describes that this area will be planted with enough tree to meet the minimum stocking standard of 125-point count (which would be at least 125 trees per acre).

Comment letters expressed concern with the potential fire risk associated with plantation management. As one would expect, CAL FIRE has concerns about responsible forest management as well as protecting lives and property. If there is a significant increase in risks associated with plantations, CAL FIRE needs to ensure that those risks are mitigated to protect life and property. Not only must we be concerned with protecting the public, but our employees as well which must go into these forested landscapes to fulfill their mission.

All CAL FIRE employees, no matter where they serve, are available to assist with emergency assignments at any time. For example, the CAL FIRE Inspector for the Tuolumne County area as well as the Tuolumne-Calaveras Unit Forester are also emergency responders who are often some of the first people to arrive on scene to a fire. They fill a variety of roles as part of an emergency response and are well aware that their duties as foresters can impact the safety of other emergency responders. Proposed harvesting plans are reviewed with both natural resources and public safety in mind.

The public is justified in being concerned about how logging operations can impact fire danger, and it is appropriate that CAL FIRE respond adequately to these concerns. The first concern related to fire hazard is the one posed by tree plantations, and their potential to cause fires to burn hotter and faster.

While there is literature studying the effects that plantations have on fire behavior, a clear cause and effect relationship between plantations and fire danger has not been established. This is primarily because there is a great deal of variability in how plantations are managed. This is especially true with private California timberlands as described below.

CAL FIRE has reviewed many studies on how fires burn within managed and unmanaged landscapes. Often, concerns related to fire behavior and plantations are added as public comment, referring to one of more of these studies. A brief discussion of those studies is provided below for context.

- Wildfire Effects Evaluation Project – Umpqua National Forest (Morrison, Marshall, Minor, & Davis, 2003)
    - *Fire burned most plantation areas with high intensity and spread rapidly through the canopy of these young stands. However, surface-fire intensity was moderated because fuel accumulations on the ground were relatively light. Thus, many plantations experienced moderate-fire severity (high intensity, low heat).*

    - *Fifty-five percent of the plantation areas within the 2002 fire perimeter burned as stand-replacement fires (Appendix A). Plantation mortality is disproportionately high compared to the total area that plantations occupied within the fire perimeter. In fact, mortality in plantations accounted for 41 percent of all mortality on the fires, while the plantation area represented only 22 percent of the total area within the fire perimeter. Younger-age plantations were damaged more than the older*

plantations and the unmanaged forest (Figure 17: Stand Replacement Mortality in Managed (Regen) and Unmanaged Stands). In fact, 74 percent of plantations 20 years old or less experienced stand replacement mortality. By comparison, mortality was only 40 to 50 percent in stand 21 to 50 years old. (Page 19-20)

- *Research in the moderate-severity fire regime of the mixed-evergreen forest of northern California showed a strong relationship of 1987 fire damage in plantations to fire damage levels in adjacent stands (Skinner and Weatherspoon, 1996). Data suggest that fuel treatments within dispersed locations alone may not reduce fire hazard. (Page 20)*

- *Fuel Model 5 best represents the early-seral vegetation including shrub communities and even-aged young plantations. As noted previously, these early-seral stands cover a greater portion of the landscape today than occurred historically. Crown fire spreads readily through these young stands: rates of fire spread can be high, and significant areas of mortality can occur in and adjacent to these stands. (page 25)*

When CAL FIRE reviewed this study, it was noticed that the plantations were classified under fuel (Anderson, 1982). Anderson described these fuels as follows:

"Fire is generally carried in the surface fuels that are made up of litter cast by the shrubs and the grasses or forbs in the understory. The fires are generally not very intense because surface fuel loads are light, the shrubs are young with little dead material, and the foliage contains little volatile material. Usually shrubs are short and almost totally cover the area. Young, green stands with no dead wood would qualify: laurel, vine maple, alder, or even chaparral, manzanita, or chamise."

An examination of representative photos included in the Morrison study showed conifer plantations with a continuous shrub understory. Fuel loading appeared to be high and there was no apparent break in either the vertical or horizontal continuity of fuels. Under these conditions, it is not surprising that young plantations suffered a high degree of mortality. It must be pointed out, in contrast, that plantations on private timberland in California receive a degree of post- harvest cultural treatments (either via mechanical, fire or herbicide treatment) that prevents the level of shrub and fine fuel buildup noted in the Morrison study. As a result of this important difference, CAL FIRE cannot draw a reasonable cause and effect conclusion between the conditions found in the Morrison report and the THP area.

- Southwest Oregon Biscuit Fire: An Analysis of Forest Resources and Fire Severity (Azuma, Donnegan, & Gedney, 2004)

In this study of burn severity following the Biscuit Fire, the Forest Service found that the areas with the highest fire severity were most closely correlated with low site (i.e. Poor growing conditions - Site Class IV, V, and VI), and non- stocked areas (areas that are brush dominated). Table 11., from the report appendix shows that 74% of the non stocked (brush) areas burned with high and moderate severity while 100% of the stands classified as seedling/sapling (<5" DBH) burned with low severity. Results of another study in the same area (Thompson, Spies, & Ganio, 2007) on stands logged and planted after a 1987 fire indicated an increase in fire behavior and mortality in logged stands but noted that these stands had lower conifer densities and more brush than typical plantations. Other studies in the area (Raymond & Peterson, 2005) did not have a statistically valid sample of stands necessary upon which to validate the accuracy of fire behavior in stands they had previously harvested. From an examination of these studies, a direct causal link between plantations and increased fire danger could not be established.

What was apparent from an examination of the literature was the difference between the plantations evaluated in those studies and those that are managed in California. For the most part, plantation density is managed below densities required to sustain independent crown fire (Peterson, et al., 2009). These stands are also managed during the early successional period to remove or restrict the growth of competing vegetation that can carry fire from the fine fuels into the crowns of the trees.

- Effects of Timber Harvest Following Wildfire in Western North America (Peterson, et al., 2009)

> *The forest developing after wildfire or postfire logging may, over time, also constitute a fire hazard because trees can act as part of the understory fuelbed. As crowns emerge from the shrub layer, the low canopy base height creates torching potential (cf. Scott and Reinhardt 2003). If the stand is dense (e.g., 10-cm d.b.h. trees at a density of >1200 per ha), canopy bulk density may be high enough (>0.12 kg/m3) to carry independent crown fire under severe fire weather. Canopy base height will eventually increase, reducing torching potential. Fuel dynamics can also be affected by site productivity. For example, in the Olympic Mountains (Washington), fine fuel mass following fire at a productive site (Agee and Huff 1987) was higher than short-term fine fuel mass following fire on drier sites (table 2). In southwestern Oregon, sites burned with high-severity fire had lower fine fuel loads than unburned sites, but on the Olympic site, fuel mass in the first year postfire was twice that of unburned forest primarily owing to branch fall caused by a windstorm during the first postfire winter.*

The fire hazard mentioned in the Scott and Reinhardt study appears to be for plantations where competing vegetation has not been treated, thereby providing

a ladder of fuels to carry fire into the crowns. When the hazard is reduced (If the competing vegetation was treated and not present) it stands to reason that the early hazard would be mitigated. The study also says that it would require approximately 485 trees per acre of higher density to carry independent crown fire, under severe fire weather conditions. Most plantations are planted at an initial density lower than this, with the new stocking standards allowing for as little as 125 trees per acre. As will be shown below, this results in a significant reduction in both vertical and horizontal continuity. Also, the number of days where severe fire weather would occur is low, relative to the number of days in a year, further lowering the risk.

- Fire-Silviculture Relationships in Sierra Forests (Weatherspoon, 1996)

  Weatherspoon, studying the effects of fire damage on managed and unmanaged stands, noted that plantations were damaged at a higher rate than the unmanaged stands, but also noted the shift in management technique that the forest service had used in the recent past, which took the evaluated stands on a trajectory that differs significantly from those on private timberlands:

  > ***"In recent years, however, concerns over air pollution from burning and adequate retention of soil cover and large woody debris have led managers to forego site preparation and plant through untreated slash on some units****. Depending on the site, clearcut units generally have been planted either with ponderosa pine (Pinus ponderosa Doug. ex Laws.) or Douglas-fir (Pseudotsuga menziesii [Mirb.] Franco) seedlings, or combinations of the two species.* ***Until the early 1980s, plantations routinely were sprayed with herbicides to release conifer seedlings from a wide variety of competing plant species. Since then, restrictions on use of herbicides have led to fewer plantations being released, and those mostly with hand tools. No recorded precommercial thinning was done in plantations affected by the 1987 fires****." [Emphasis added]*

In the study area, hazard reduction, site preparation, competing vegetation treatment and precommercial thinning (all common on private forestlands) were not applied. Further in his study, Weatherspoon noted that the increased damage to plantations was more due to the size of the trees and their position in relationship to fine fuels, the primary driver of fire behavior. What Weatherspoon identified as the single biggest indicator of fire danger, as noted above, was the method chosen for site preparation:

> ***"Site preparation method (as represented by dummy variables) was the only factor related to uniformity of damage, and it was highly***

> ***significant. Untreated plantations burned quite uniformly (and severely), and differed markedly from treated units in terms of uniformity of damage.*** *Broadcast burned units showed the greatest tendency for fire damage to decrease from the edge of the unit inward- i.e., for the plantation apparently to retard the spread and intensity of the fire. They differed significantly from machine piled units, which tended more towards a spotty burn pattern.* ***No instances were observed in which fire damage increased from the edge of the plantation inward.*** *Further Quantification of results related to uniformity of damage probably is not warranted, given the subjective nature of this variable." [Emphasis Added]*

Also noted above was the observed decrease in damage to plantations the further the observation was made from the adjacent stand, suggesting that damage to the plantation was influenced by the fire behavior of the non-evenage stand. This could be because radiant heat damage from the adjacent stand created an increase in crown scorch near the edge of the plantation, but that as the fire moved into the fine fuels of the plantation, intensity and crown scorch decreased. As has been stated above, CAL FIRE could find no direct nexus between evenage management, in and of itself, and an increase in fire danger.

- Reburn severity in managed and unmanaged vegetation in a large wildfire (Thompson, Spies, & Ganio, 2007)

> *The Biscuit Fire tended to burn at relatively high severity in young naturally regenerated stands and even more severely in young conifer plantations of comparable age and fire history. This suggests that young forests, whether naturally or artificially regenerated, may be vulnerable to positive feedback cycles of high severity fire, creating more early-successional vegetation and delaying or precluding the return of historical mature-forest composition and structure.*
>
> *It should be noted, however, that many of the plantations examined in this analysis had lower conifer densities and a larger component of shrubs and hardwoods than would be found in typical intensively managed plantations of the same age (11–14 years).*

This is consistent with the findings of the Azuma, Donnegan, & Gedney, 2004 report where it disclosed a disproportionate number of low site acres in the fire area (IV and lower). It was these low site acres that burned the hottest, presumably due to the presence of brush that created a continuous and receptive ladder to carry fire into the tree canopy.

> *Reducing connectivity of surface fuels at landscape scales is likely the only way to decrease the size and severity of reburns until vertical diversification and fire resistance is achieved*

The process of breaking up the horizontal and vertical continuity of fuel within plantations is achieved through the control of competing vegetation (e.g. brush) and controlling the density of trees in the plantation (through precommercial of commercial thinning).

- Severe fire weather and intensive forest management increase fire severity in a multi-ownership landscape (Zald & Dunn, 2018)

  As with other studies reviewed above, there are myriad differences between California and Oregon forestry practices that must be considered. The primary author of the study (Zald) was contacted on April 8, 2019 to inquire about applicability of this study to areas in California. The author was cautious about applying the study results outside of the geographic region and context of the study. The study itself provides numerous caveats that must also be considered when determining how applicable the results are to a particular area. For example, the plantations on the O&C lands mentioned in the study are typically managed on a 30-50 year harvest rotation. The harvest rotation ages in the study area are well below those found in California, by as much as half the minimum age for Site 1 timberland. Also, precommercial and commercial thinning is not a common practice in plantations in the Pacific Northwest. California plantations receive both pre-commercial and commercial thinning treatments in addition to other vegetation management treatments (e.g. site preparation, herbicide treatments) that appear to be lacking in the study area. These practices align with the authors descriptions of measures that would reduce fire severity and further differentiate the study area from California forests. For example, the author provides suggestions on measures that would reduce fire severity, one being, “increasing the age (and therefore size) of trees and promoting spatial heterogeneity of stands and fuels is a likely means to reducing fire severity, as are fuel reduction treatments in plantations.” When compared to the study area, California plantations are grown to an older age and receive fuel reduction treatments in the form of precommercial thinning and commercial thinning.

Visual Comparison of Plantation Density

The differences in management between Oregon and California (and between federal and private lands) cannot be understated. Most of the studies discussed above were from plantations on Federal lands, or on lands in Oregon that were managed much differently in California.

Below is a visual demonstration of the difference in plantation stocking between lands similar to what was described in (Zald & Dunn, 2018) and those that will be planted for this THP. The stands on the left are planted at 400 trees per acre and those on the right are planted at 125 trees per acre. The top picture is the stand at 30 years of age and the bottom is 10 years. Visually you can see the crowns on the left side of the screen are much closer, allowing fire to carry easier from tree to tree.

Figure 1. Top-down view of planting density (400 on the left and 125 on the right). Images on top are the stand at 30 years and the bottom is 10 years of age. Image generated using Visual Stand Designer (https://visualforester.com/)

If trees are planted at a lower density, and competing vegetation is controlled to the point where there is little to no horizontal or vertical continuity, the fire danger within the plantation is minimized until the point where the crowns are well above the surface fuels.

Figure 2. Side view of a 10 year old plantation with 400 trees per acre. Image generated using Visual Stand Designer (https://visualforester.com/)

Figure 3. Side view of a 30 year old plantation with 400 trees per acre. Image generated using Visual Stand Designer (https://visualforester.com/)

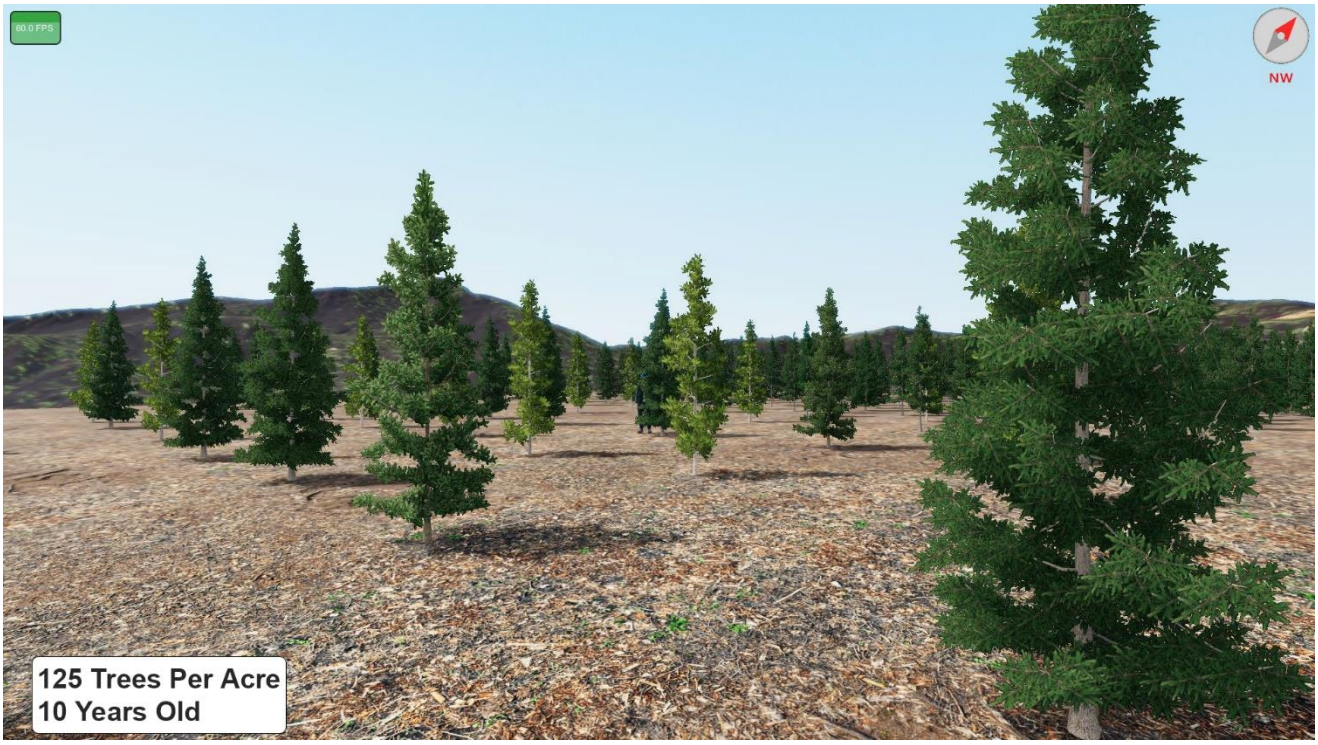

Figure 4. Side view of a 10 year old plantation with 125 trees per acre. Image generated using Visual Stand Designer (https://visualforester.com/)

Figure 5. Side view of 30 year old plantation with 125 trees per acre, Image generated using Visual Stand Designer (https://visualforester.com/)

Beyond the stand level one must look to the larger landscape in order to understand the context of individual stands. Concerns relative to fire danger typically do not fully appreciate the diversity of stand conditions that exist across the landscape. Variability in fuel loading, composition and moisture greatly impact fire behavior. It is important to remember that areas proposed for evenage management are small in size, from a landscape perspective (20-30 acres depending on yarding method). As a result, even if a particular stand has a higher fire danger than a surrounding one, the area upon which that stand could impact overall fire hazard is very low. Except for instances where a fire has reached a plume-dominated or wind-driven state, rapid changes in vegetation types have the ability to significantly alter fire behavior. For instance, a fire that is moving through the crowns of a mature timber stand can move into a ground fire, when it reaches a plantation where spacing and competing vegetation is managed (as occurs on private timberlands). The variability of vegetation types can alter and moderate fire behavior. What we see in recent catastrophic fires is the combination of extremely dry fuels, aligned with terrain and driven by winds.

Concerns of Another “Paradise”:

The concern mentioned the devastating fires that have occurred recently in California and express the same fears for Dorrington or Calaveras Big Trees State Park. The fear of losing homes or lives to wildfire is understandable and, as has been described above, is a prime concern of CAL FIRE.

When it comes to direct cause and effect investigations related to wildfire, there are few available. A scientific analysis of the Camp Fire progression was released earlier this year by the National Institute of Standards and Technology, a department of the US Department of Commerce (Maranghides, 2021). This study examined the fire progression in extreme detail and reached several conclusions on the causation of the fire intensity:

> *The Camp Fire ignited on November 8, 2018 in the foothills of the Sierra Nevada in Butte County, California. The first 24 hours were characterized by a fast-moving fire with initial spread driven by high winds up to 22 m/s (50 mi/h) and long-range spotting up to 6.3 km (3.9 mi) into the community. The fire quickly impacted the communities of Concow, Paradise, and Magalia. The Camp Fire became the most destructive and deadly fire in California history, with over 18,000 destroyed structures, 700 damaged structures, and 85 fatalities. After a preliminary reconnaissance, it was determined that abundant data was available to support an in-depth case study of this devastating wildland-urban interface (WUI) fire to increase our understanding of WUI fire spread, fire behavior, evacuation, and structure response. The methodology guiding the case study and a detailed timeline reconstruction of the fire progression and fire behavior are presented. Over 2200 observations about fire spread and behavior were collected during the case study. Subsequent reports will detail additional aspects of the incident including emergency response and evacuation, and defensive actions and structure response. This study has identified that Butte County and the Town of Paradise were well prepared to respond to a WUI fire, that the Camp Fire grew and spread rapidly and that multiple factors contributed to the rapid growth and spread of the Camp Fire. Additionally, this study identified the importance of the wildland fire ignition location relative to the community, that multiple parcel-level fire spread pathways caused*

structure ignitions, and that WUI fire spread impacted the affected communities in multiple ways beyond the destruction of residential and commercial properties.

What were the primary causes of the extensive devastation?
There are many factors that may impact individual structure survivability and the effectiveness of defensive actions at a parcel level. When viewing the Camp Fire in its entirety, four factors were identified that most significantly influenced overall fire losses:
i. Fuel ignition potential,
ii. Density of vegetative and structural fuels,
iii. Wind and terrain, and
iv. Extent/size of fire front reaching the communities.

Fuel Ignition Potential
Fuel receptivity to embers and ignition potential was a result of over 200 days with almost no precipitation. Fuel moisture contents were at or near record low for the time of year. The presence of fine fuels, including but not limited to pine needles and ornamental vegetation stressed by limited precipitation, enabled a number of spot ignitions by embers traveling well ahead of the fire front. Fuel receptivity and ignition from embers was clearly conveyed in multiple first responder statements reporting "100 % ember ignitions." It was this fuel receptiveness that caused the large number of ignitions within the communities. In Paradise, these ignitions started approximately 30 min to 40 min before the arrival of the fire front and rapidly grew in number when the front reached the community.

Density of Vegetative and Structural Fuels
All three communities, Concow, Paradise, and Magalia, are intermix communities that have developed over decades among the local wildland vegetation. Concow can be considered low population density intermix with 10 people/km2 (26 p/mi2), while Paradise and Magalia can be classified as high-density intermix communities with 552 p/km2 and 312 p/km2 (1433 p/mi2 and 808 p/mi2) respectively.

The absence of fire within most of Paradise and Magalia for many decades had resulted in significant vegetative fuel accumulation. The vegetative fuel loading was further increased by diseased vegetation (specifically pines). Seasonal needle dropping, combined with diseased trees and further enhanced by high winds, resulted in extensive needle accumulation before and during the fire. The historic growth of Paradise and surrounding communities, going back over a century, resulted in many structures placed on smaller lots. The short structure separation distances, together with the vegetative fuel loading, enabled rapid structure-to-structure fire spread.

Fuel treatments have been used extensively to compartmentalize the landscape in the area around Paradise, Magalia, and Concow. The intent was to provide access for firefighting operations and reduce the total impact of wildfires by reducing the total acreage burned. Fuel treatments were used not only to influence wildland fire behavior but also to protect critical infrastructure such as the primary pumping station and treatment plant of the Paradise Irrigation District. Together with defensive actions, these specific fuel treatments met their objectives during the Camp Fire, and the critical infrastructure was undamaged. This specific fuel treatment example is included here to

highlight the value of pre-fire preparation and vegetative fuel reduction in protecting critical infrastructure. The systematic analysis of the effectiveness of fuel treatments and their impact on fire behavior are beyond the scope of this report.

Wind and Terrain
The terrain of eastern Butte County is defined by the Sierra Nevada foothills and numerous deep river canyons and ravines.

The Feather River Canyon and Jarbo Gap, near the fire's origin, are known for their particularly high winds. Ridgetop gusts over 22 m/s (50 mi/h) are not uncommon, and the downslope north winds bring dry air through the foothills and the Town of Paradise.

The north wind event that occurred in the early morning on November 8 combined with receptive fuels, and the restricted access associated with topography contributed to the rapid growth of the fire, exceeding the ability for initial containment.

It is the confluence of these four factors (fuel ignition potential, high fuel density, wind and terrain, and extent of the fire front reaching the communities) that caused the aggressive fire behavior resulting in dangerous conditions for residents and first responders and in extensive damage and destruction.

Multiple Factors Contributed to the Rapid Growth and Spread of the Camp Fire

F5. Dry winds, with recorded gusts at Jarbo Gap exceeding 22 m/s (50 mi/h) from the northeast, increased fire spread in vegetative and structural fuels.
F6. Steep topographical features including river canyons and creek drainages channeled north winds and accelerated fire spread through vegetative fuels.
F7. Extremely dry vegetative fuels, associated with over 200 days without any significant precipitation, increased the fuel ignition potential around and within Concow, Paradise, and Magalia.
F8. Fire spread toward Paradise from Concow was fueled by heavy conifer forests with brush understory. At lower elevations oak woodlands and savannah grass were primary fuels.

5.2. Fuels Description
Fuels around the point of origin and downwind towards and within Paradise and Magalia consisted of heavy conifer timber with brush understory. At lower elevations, oak woodland and grass savannah were the primary fuels. The area near the fire origin had burned previously in 2008; however, fuels west of the West Branch of the Feather River, in Paradise and Magalia, had not burned in recorded history (see Section 5.4). Timber was characterized by close crown spacing with heavy manzanita and oak cover underneath.

Fuel moisture levels were uncharacteristically low for the time of year due to the protracted dry period and late arrival of rain beginning the wet season. Fuel moisture levels [34] for 1000-hour time lag fuels measured at the Pike County Lookout south east of the fire area were at 5 % on November 1, well below the

17 % average for the Northern Sierras in November. Live fuel moisture in manzanita was 74 %; the critical level, in terms of fire hazard, for manzanita is 80 %. The average for November is 93 % [TD-131].3

The Energy Release Component (ERC) output by the National Fire Danger Rating System (NFDRS), a measure related to the total fuel energy availability per unit area (J/m2, Btu/ft2), which increases as fuels cure/dry, trended slightly above average for the northern Sierras during the summer, but in early October it began trending well above average. On the day of the fire the ERC calculated amongst a grouping of nearby fire weather stations was 80, above the historic record for the date (60) and above the 90th percentile for all dates in the previous 10 years (80). ERC values are presented in ***Figure 4****, developed by Aviva Braun from the National Weather Service. A slideshow by Ms. Braun on the weather conditions during the Camp Fire is presented in Appendix D [35].*

5.3. Weather
Weather before and during the Camp Fire, as for many rapidly spreading fires, was characterized by dry and windy conditions. In California, the windy conditions are often brought by downslope north wind events, bringing warm, dry air through fire prone regions. Jarbo Gap is known for locally high winds, particularly during north wind events which align with the Feather River Canyon. The Big Bend of the Feather River channels and forces winds up and over the ridge at Jarbo Gap. While dry or windy conditions are not unusual in Butte County, the overlap of late season dryness with a north wind event was relatively uncommon. Wetting rains typically begin in September before the frequency of north wind events increases in November and December [TD-003, TD-131].

It was very unusual to have fuel dryness levels so low in November in Butte County. In most years significant rain would have fallen by November, dampening fine fuels and lowering the ignition hazard. However, with the exception of a small amount of rain in early October leading up to the Camp Fire, it had been over 200 days since 13 mm (0.5 in) or more of rain had fallen at the lower elevations of Butte County. The U.S. Drought Monitor [38] reported much of Butte County in the "D0 Abnormally Dry" condition for the 19 weeks leading up to the fire, between June 26 and November 6, moving into "D1 Moderate Drought" on November 13Figure 6 [39].

Gusty winds were measured at the Jarbo Gap Remote Automated Weather Station (RAWS) [37] starting around 19:00 on November 7, becoming very strong by 21:00. Sustained winds of 12 m/s (27 mi/h) continued overnight with gusts over 22 m/s (50 mi/h). At the time of ignition on November 8, the RAWS station reported 8 m/s (18 mi/h) winds gusting to 18 m/s (40 mi/h) with relative humidity of 23 %. Wind direction across the foothills and ridgetops was almost exclusively from the northeast, driving the fire toward Concow and Paradise. Wind gusts during the day on November 8 were around 13 m/s (30 mi/h) with sustained winds of 5 m/s to 9 m/s (12 mi/h to 20 mi/h) from the northeast. Relative humidity dropped to 10 % during the day.

While selective fuel treatments were conducted in and around both communities (see Section 13.2), the lack of fire history throughout Paradise and Magalia was directly connected to the vegetative fuel loading in both communities.

9.4. Impact of Winds, Wildland Fuels, and Terrain on Fire Behavior
Section 5.3 in this report presents an overview of the weather during the Camp Fire. Local observations and video documentation provided additional resolution and information on how the wind affected local fire behavior. Firsthand observations on Rim Road at 07:20 on November 8 talked of "softball size rocks hitting the engine" [TD-005]. These reports were consistent with the short video from the TD and likely indicated local winds in the range of 22 m/s to 27 m/s (50 mi/h to 60 mi/h). These values agree with the forecasted ridgetop winds.

Figure 25. Strong wind gusts blew dirt and rocks whipping across the ridgetop at Rim Road.

Terrain also directly impacted fire behavior, resulting in dramatic fire behavior as observed around 18:00 on November 8, with flame lengths of 30 m to 60 m (100 ft to 200 ft) breaking out of the Butte Creek Canyon into Wilder Drive [TD-117]. Similar effects of topography, compounded with high fuel loading and possible alignment with local winds, resulted in significant fire activity in other areas within the fire perimeter, including the drainages to the north of Nelson Bar Road where flame lengths of 15 m to 30 m (50 ft to 100 ft) were reported.

The terrain also impacted fire spread indirectly by restricting or slowing down access by first responders. An example is provided here to illustrate the impact of topography on access. A straight line from Rim Road (39° 47' 34.89" N, 121° 28' 24.00" W) to the intersection of Pentz Road and Skyway is 9.3 km (5.75 mi); however, it takes 40 km (25 mi) and 43 minutes of drive time to get there. The fire is thus able to travel much faster than ground suppression forces. Further information on incident response and defensive actions will be presented in NIST Camp Fire Report #5.

The extensive spotting, caused by ember transport and the low ignition threshold of abundant dry vegetative fuels, such as pine needles, discussed below, resulted in

> *multiple ignitions of vegetation and structures that quickly spread and overwhelmed the available firefighting resources. The spot fires then grew and "backfilled," causing severe local fire exposures in many cases. These high intensity exposures might have then generated strong local winds and blackout conditions downwind.*
>
> *Needle drop associated with drought-stressed vegetation, time of year, and disease resulted in piles of needles throughout town, even though the Town of Paradise had just swept the streets. The same buildup also occurred on properties and roofs that had been recently cleaned. This further accentuated the hazard on properties that might not have been recently maintained.*

The extreme fire weather observed during the first day of the Camp Fire played a significant part in the devastation that followed. As described above, sustained winds of 27 MPH with gusts to 60 MPH in the area of the fire created the most extreme of results.

It is abundantly clear from reading the report that the factors influencing the devastation caused by the Camp Fire are numerous and complex. Attempting to tie the impacts of the Camp Fire to forest management are not supported by the record and are entirely speculative.

As to the comparison between Paradise and the THP area, it is too speculative to say what would happen if a fire occurred in the plan area. The Forest Practice Rules prescribe hazard reduction measures, as described above, and they are intended to reduce the potential for fire starts, and to reduce excess fuel loads generated by Timber Operations. Additionally, the silvicultural prescriptions used in this plan will result in lower tree densities on the landscape, and less vertical continuity between the surface fuels and the tree canopies. No hazard can be reduced to zero, but the combination of the proposed actions within the plan (both silviculture and road maintenance/construction) along with required hazard reduction activities and planning have allowed CAL FIRE to conclude that the plan will not result in a significant adverse effect on Wildfire Risk and Hazard.

SUMMARY AND CONCLUSIONS

The Department recognizes its responsibility under the Forest Practice Act (FPA) and CEQA to determine whether environmental impacts will be significant and adverse. In the case of the management regime which is part of the THP, significant adverse impacts associated with the proposed application are not anticipated.

CAL FIRE has reviewed the potential impacts from the harvest and reviewed concerns from the public and finds that there will be no expected significant adverse environmental impacts from timber harvesting as described in the Official Response above. Mitigation measures contained in the plan and in the Forest Practice Rules adequately address potential significant adverse environmental effects.

CAL FIRE has considered all pertinent evidence and has determined that no significant adverse cumulative impacts are likely to result from implementing this THP. Pertinent evidence includes, but is not limited to the assessment done by the plan submitter in the watershed and

biological assessment area and the knowledge that CAL FIRE has regarding activities that have occurred in the assessment area and surrounding areas where activities could potentially combine to create a significant cumulative impact. This determination is based on the framework provided by the FPA, CCR's, and additional mitigation measures specific to this THP.

CAL FIRE has supplemented the information contained in this THP in conformance with Title 14 CCR § 898, by considering and making known the data and reports which have been submitted from other agencies that reviewed the plan; by considering pertinent information from other timber harvesting documents including THP's, emergency notices, exemption notices, management plans, etc. and including project review documents from other non-CAL FIRE state, local and federal agencies where appropriate; by considering information from aerial photos and GIS databases and by considering information from the CAL FIRE maintained timber harvesting database; by technical knowledge of unit foresters who have reviewed numerous other timber harvesting operations; by reviewing technical publications and participating in research gathering efforts, and participating in training related to the effects of timber harvesting on forest values; by considering and making available to the RPF who prepares THP's, information submitted by the public.

CAL FIRE further finds that all pertinent issues and substantial questions raised by the public and submitted in writing are addressed in this Official Response. Copies of this response are mailed to those who submitted comments in writing with a return address.

ALL CONCERNS RAISED WERE REVIEWED AND ADDRESSED. ALONG WITH THE FRAMEWORK PROVIDED BY THE FOREST PRACTICE ACT AND THE RULES OF THE BOARD OF FORESTRY, AND THE ADDITION OF THE MITIGATION MEASURES SPECIFIC TO THIS THP, THE DEPARTMENT HAS DETERMINED THAT THERE WILL BE NO SIGNIFICANT ADVERSE IMPACTS RESULTING FROM THE IMPLEMENTATION OF THIS THP.

Letter of Concern:

Central Sierra Environmental Resource Center
Box 396 Twain Harte, CA 95383 (209) 586-7440 FAX (209) 586-4986
Visit our website at: www.cserc.org or contact us at: johnb@cserc.org

April 26, 2021

CAL FIRE Review Team
Forest Practice Program Manager
CAL FIRE
1234 East Shaw Avenue
Fresno, CA 93710-7899
(559) 222-3714

RE: THP 4-21-00047-TUO (Cobbler THP)

Dear Forest Practice Program Manager,

The Central Sierra Environmental Resource Center (CSERC) submits these comments in response to the Cobbler THP. The Cobbler THP would allow 44 acres of selection logging 212 acres of alternative prescription, 123 acres of fuel break / defensible space, and one acre road right-of-way. The total project acreage of this THP is 380 acres; in addition to 263 acres of operational buffer.

The Cobbler THP area is located in the Lower Griswold, Upper Griswold, and Skull Creek watersheds, which eventually flow into the North Fork of the Stanislaus River. These watersheds have a long history of being logged. The project is located near the middle of the "Standard Block" which was once owned by the Standard Lumber Company in the early 1900s. The project area has been logged multiple times in the last decade - e.g. 2010 Grizzly Meadow THP and 2016 Skull Knoll THP. About 40% of the area has steep slopes, and about 50% of that is within the Griswold and Skull Creek drainages (page 108). Units 5157, 4046, 3902, 2341, 2430, 2284, 2322, 2311, and 1497 have slopes that exceed 40%. Broadcast burns will occur in areas with slopes exceeding 40% and with Class III watercourse areas. More moderate slopes are along the ridgeline, where the fuelbreak is planned.

The project area predominantly has slopes with moderate and high erosion hazard ratings, and SPI plans to operate heavy machinery, construct landings, construct roads, and use tractor watercourse crossings in winter. There are 630 feet of seasonal road, 1,429 feet of temporary road, and ~200 feet of these roads will be on a grade that exceeds 15% within the project area (page 36). There is suitable habitat for Pacific fisher, California Spotted Owl, and four historical Northern Goshawk nest sites. In addition, foothill yellow-legged frogs and Sierra Nevada yellow-legged frogs have been observed in close proximity to the project area.

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CSERC provides the following specific comments.

While many of these comments are re-statements of comments we have previously submitted for similar THPs, the fact that SPI continues to submit similar THP plans makes repetitive use of our comments both logical and necessary. Until such time that SPI THPs adjust to respond to the key issues we have identified, many of our comments may be redundant with previously submitted comments.

Winter Operations

During the fall, winter, and early spring periods, soils are often saturated for extensive periods of time. This THP, as proposed, would allow the use of class III watercourse crossings, road construction, use of temporary roads, and landing construction during winter months under the Winter Period Operation Plan (WPOP) and Ground Conditions (page 33). The Ground Conditions in the WPOP restrict operations during the winter period with the requirement that operations "*may take place during extended dry periods when roads and landings are generally firm and easily passable or during hard frozen conditions*" (page 33). Our center asserts that it is highly unlikely that field employees doing logging operations will be able to accurately and neutrally judge the conditions of the soils.

We recommend that a neutral party be given the authority to make soil condition determinations that allow winter season operations.

This THP would allow mechanical site prep to be conducted during the winter period, "mechanical site preparation will not occur on slopes over 40% during the winter period" (page 32). All of this work creates the potential for a significant amount of sediment runoff to occur throughout the project area which has moderate to high erosion hazard ratings (page 20). Broadcast burns may be used in areas with slopes exceeding 40% (page 32).

Class III watercourse crossing may occur during the Winter Period (page 32). Temporary tractor road crossings of Class III watercourse may be constructed and used during the winter period if conditions are dry (page 32).

The THP states that roads and landings will be "hydrologically disconnected from watercourses and lakes to the EXTENT FEASIBLE" (page 21). This wording shows that the applicant cannot guarantee that erosion into waterways will not occur, therefore they cannot ensure that water quality will not be adversely impacted. In addition, the inability to actually monitor the effects of winter operation on water quality underscores the need to limit operation to dry months.

As noted in our comments above, it is challenging for a field employee to accurately judge the conditions of the soils under winter conditions, and it is also unlikely that a timber operator would be able to judge whether or not the sediment deposited in streams has increased turbidity to unacceptable levels or whether the sediment visually observed has exceeded water quality standards.

Because CAL FIRE has a legal responsibility to protect water, it is important for CAL FIRE to ensure that regulatory requirements related to winter conditions are verified by either some measurement standards that can be assessed for accuracy, or that the determination for soil conditions or turbidity in streams be assessed by a third party with neutrality CSERC respectfully presses for CAL FIRE to avoid approving winter season operations based entirely on unsubstantiated claims by project operators that their operations are not affecting water quality.

Road conditions, skid trail conditions, and other areas across the project sites will vary widely in terms of soil saturation due to slope, exposure, etc.. Some soils (such as on north or east-facing slopes) may be saturated, while others (drier south-facing slopes) are not, making it challenging to avoid saturated conditions that are likely to produce significant sediment discharge. Therefore, our Center continues to oppose allowing timber operations during the winter period - but if those are nevertheless approved, we ask for the following.

Either winter operations should be denied or the Director should require a neutral party to judge road conditions, soil saturations, and to the extent feasible to monitor the turbidity of streams on a regular basis during rain events -- both during operations and following timber operations. This will provide actual data that would potentially reveal whether water quality standards are indeed being met.

Herbicide Use

The THP asserts that the actual use of a particular herbicide is not certain for this THP (page 213), however, SPI consistently applies herbicides whenever desirable in site preparation and reforestation treatments.

Watercourses

Watercourses are not only proposed in Class I - III through Griswold Creek, Skull Creek and other unnamed tributaries, but treatments within watercourses are also proposed to occur in affecting springs and seeps.

Our Center asks that all wetland areas be required to be avoided, and that a no-mechanical equipment buffer is provided around the seeps and springs to avoid impacts to these sensitive areas, in addition to having watercourse protection zones for Class I-III in order to increase the protection of FYLF

Water Drafting

Water drafting guidelines Section II Item 38 on page 70 state that "Water shall be drafted at a rate not to exceed 250 gallons per minute". On page 104 the THP reads "Water shall be drafted at a rate not to exceed 200 gallons per minute".

CSERC asks that this inconsistency between the two amounts (250 gallons per minute vs. 200 gallons per minute) be addressed to avoid a reduction in stream

flows that will impact aquatic resources downstream and provide consistent guidelines.

Should there be a drought, any removal of water from streams will further stress aquatic animals. Griswold Creek is a fish-bearing, Class I watercourse. Other waterways near the project area have foothill yellow-legged frogs and Sierra Nevada yellow-legged frogs (pages 59-60). To avoid detrimental effects to amphibian habitats, fish-bearing and non-fish bearing streams, SPI should be required to comply with the same water drafting standards as the Forest Service. BMP 2.5 that is relative to logging operations on lands within the Stanislaus Forest.

Raptor Protections

There are four known historic Northern Goshawk nest sites within the project area.

Our Center strongly asserts that pre-operational surveys should be required within and around the proposed harvest area in each location where previous sightings have been identified in order to ensure that any nesting CA Spotted Owl or Northern Goshawk is identified and that Goshawks are not disturbed.

Requiring pre-operational surveys has far higher potential to locate birds prior to disturbance instead of waiting until after operations have started and then expect that raptors can then be discovered during timber operations.

If pre-treatment surveys for nesting raptors of concern and other nesting birds cannot be conducted in the treatment area by a qualified biologist, then timber operations should not be allowed to occur during nesting season (between February 15 through September 30 to allow young time to fledge).

CDFW provided comments that are important for protection of at-risk raptors:

"Section II Item 32(c) states that the protection zones for California spotted owl activity centers will be made available to CAL FIRE prior to annual operations commencing in unharvested areas of this THP (page 62). CDFW recommends that we also receive this information prior to annual operation commencement.

Section II Item 32(c) includes measures for non-listed raptor species and states that these are voluntary safeguard measures, and therefore, not an enforceable condition for the Project. CDFW recommends language that describes these measures as "voluntary" are removed. "

Our Center provides strong support of the comments submitted by CDFW for this specific THP. However, we want to also re-emphasize our disagreement with the legal and scientific adequacy of the SPI-USFWS HCP "take permit" that USFWS has given to SPI for their timber operations. **Our center urges that the Director respond to the specified concerns described by CDFW staff in order to better protect nesting raptors and other wildlife species.**

Amphibian Protections

Foothill yellow-legged frogs and Sierra Nevada yellow-legged frogs are known to be present adjacent to the project area (page 59-60). Foothill yellow-legged frogs (FYLF) are known to occur about 2.0 miles to the southwest of the THP area (page 60). If a positive detection occurs for FYLF *during surveys or at any time during timber operations all vegetation and ground disturbing operations shall cease within adjacent suitable habitat and a buffer of 40 feet of the observation during the seasonal dry period and within 130 feet during the seasonal wet period* (page 60). Sierra Nevada yellow-legged frogs (SNYF) are known to occur 0.25 to 1.0 mile to the east and northwest of the THP area (page 59). If positive detections occur for SNYF *during surveys or at any time during timber operations all vegetation and ground disturbing operations shall cease and a no-operations buffer within 25 meters of the observation and adjacent suitable habitat shall occur* (page 59).

Our Center provides support of the comments submitted by CDFW regarding FYLF and SNYF protection measures:

Section II Item 32(a) states that the THP area has an elevation range of about 4,350 to 5,950 feet and that the upper elevation range for the foothill yellow-legged frog (FYLF) in the Sierra Nevada is generally considered to be 4,500 feet (page 60). However, according to A Status Review of the Foothill Yellow-legged Frog (Rana boylii) in California, individuals are known to occur from sea level all the way up to 6,400 feet in elevation (CDFW 2019). In addition, FYLF detected in Skull Creek less than a mile from the THP area were found at approximately 5,400 feet in elevation. Please update the language in Section II Item 32(a) and Section IV to reflect the potential for suitable habitat within the THP area.

Section II Item 32(a) states that if a FYLF is detected, all vegetation and ground disturbing operations shall cease within adjacent suitable habitat and a buffer of 40 feet of the observation during the seasonal dry period and within 130 feet during the seasonal wet period (page 60). CDFW recommends that the no-disturbance 40-foot buffer during the dry period and the no-disturbance 130-foot buffer during the wet period is also established around the adjacent potential habitat.

Need for Habitat Protection for the Pacific Fisher

The proposed project, along with nearby past, future, and current projects, significantly reduces forest connectivity (especially of mature conifers) which thus reduces suitable habitat for any fishers that may potentially be present within the project area. The proposed THP assumes that project activity in this region has no detectable effect on sensitive species such as the American Marten and Pacific Fisher.

Unless protocol-consistent surveys are first conducted in the project area, the THP cannot legally base wildlife impact determinations upon the unconfirmed assumption that a rare animal is not present. CSERC urges that both photo-detection surveys and track plate surveys be required prior to project operations.

Habitat fragmentation is one of the main threats to the fisher according to CDFG's "A Status Review of the Fisher (*Martes pennanti*) in California (2010)," *the fisher's ability to survive in areas that have had various silvicultural treatments depends on the size, distribution and type of those operations. "**Fishers are negatively associated with clearcuts and habitats that are nearly or completely surrounded by clearcuts** (Rosenberg and Raphael 1986) (CDFG, 2010)."* Throughout this Report, fisher mortality was directly correlated with current timber harvesting practices place is fisher habitat.

Science has shown that fisher mortalities increase in heavily harvested areas due to the reduction of habitat quality *(Kelly 1977; Weir and Harstad 1997; Simpson Resource Company 2003).* The fisher, especially females, have small home ranges, making them more susceptible to predation in areas with fragmented habitat (*Buck et al, 1994:373-374).*

The proposed project, along with past and upcoming future projects in the Upper Beaver Creek watershed, which flows into the North Fork of the Stanislaus River watershed, continues to reduce forest connectivity and suitable habitat for any fishers that may potentially be present within the project area now or in the near future. Without any scientific basis for assessing whether or not fishers may be present or absent in the plan area, SPI cannot accurately conclude that their evenage treatments will not harm the fisher.

It has been well documented that fishers are forest specialists that prefer late seral forests for denning and resting. Late seral forest characteristics such as dense canopy cover, large diameter trees, large snags, large down logs, and understory vegetation of late seral forests for foraging are critical for the fisher survival. *Such habitats as described above can be considered the Department's preliminary assessment of essential habitats and habitat elements for the fisher (CDFG).*

> *The fisher is one of several species selected to illustrate conservation issues with the Sierra Nevada and Cascade bioregion. Portions of the account from the 2007 CDFG report are as follows: "...the status of the Pacific fisher is one indicator of the status of forest condition of the Sierra, particularly the old-growth component" (CDFG 2007).* ***On June 15, 2020 the Southern Sierra Nevada DPS of fisher (Pekania pennanti) (SSN DPS) was added as an endangered species*** *to the List of Endangered and Threatened Wildlife in title 50 of the Code of Federal Regulations at 50 CFR 17.11(h).*
>
> **Fish and Wildlife Services basis for action:**
> *The implications for the DPS's status were **loss and fragmentation of habitat**...(i.e., loss of snags and other large habitat structures on which the species relies), climate change, and tree mortality from drought, disease, and insect infestations (Fish and Wildlife Services).* The Conservation of the Pacific fisher is dependent upon the approaches to and success of restoring healthy and diverse forest ecosystems along the Sierra range" (CDFG 2007:301).

This THP will continue to exacerbate the loss of fisher habitat and is not responsive to the latest science. The lack of fishers found on SPI land should at least in part be considered to

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be an indicator of the poor condition of the forest habitat found on their land. This broad general THP area is within potential travel distance of known fisher occupied habitat in Yosemite Park and the southern eastern portion of the Stanislaus Forest.

Accordingly, as a CEQA equivalent planning assessment, this THP should reasonably mitigate for potential significant impacts that would occur if this THP reduces suitable fisher habitat by removing large trees, large snags, large down logs, and closed canopy forest conditions.

CSERC asks that either SPI be required to undertake furbearer photo-detection (or track plate) surveys consistent with scientific protocols within all project units within the plan area prior to any approval of the THP, or that SPI be required to retain fisher movement corridor areas with a minimum 60% canopy cover that should retain all large snags (16" dbh>), large diameter living trees (24" dbh>), and all large diameter down logs (20"dbh) ; along with a 200' wide swath across the project units acres so as to ensure there is suitable habitat for fisher movement -- not just at the present, but into future decades as the tree plantations gradually evolve into young forest stands.

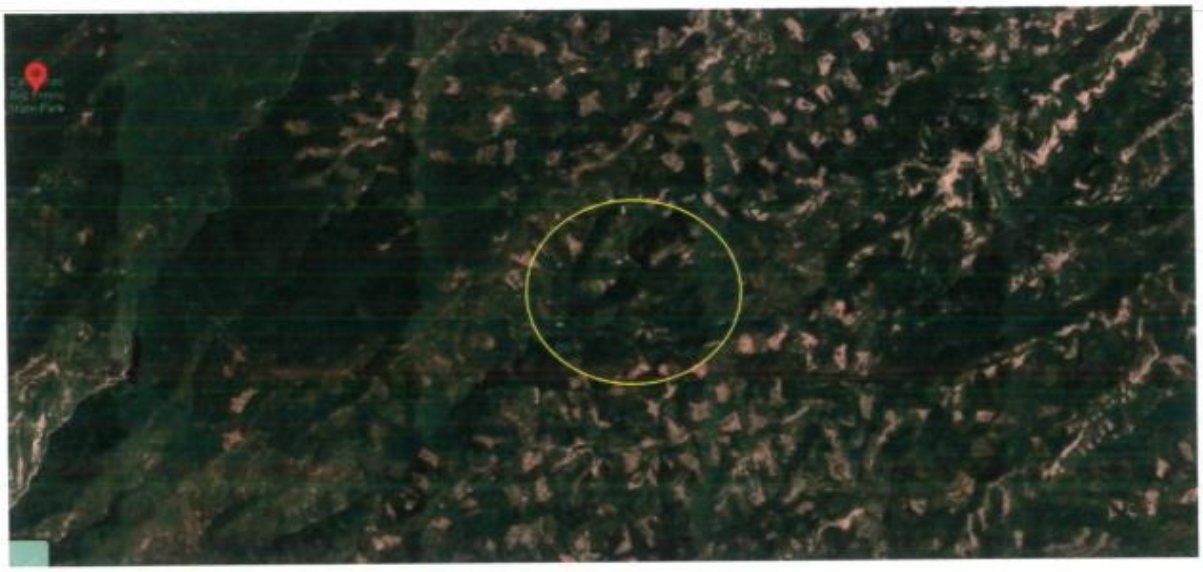
Cumulative Impacts

As noted in the first paragraph of these comments, this THP would allow for 212 acres of alternative prescription (evenage logging) similar to clearcut logging treatments. This will diminish the number of medium and large conifer trees in the project area and further convert unevenaged biologically diverse forest habitat into uniform, much more simplified and sterile habitat conditions as young tree plantations eventually grow into tree farm crops. The Project area has already been logged multiple times over more than a century and many times in recent years such as the past decade - e.g. 2010 Grizzly Meadow THP, 2016 Skull Knoll THP, and other projects. This area contains primarily second and third growth mixed conifer timber stands. All these projects have reduced canopy cover and degraded habitat for many wildlife species -- e.g. Pacific fisher, American marten, Northern Goshawk, Northern flying squirrel, and many more.

The Google Earth images below of this THP area and the surrounding area show how a checkerboard of clear-cuts already has SIGNIFICANTLY diminished mature forest habitat, created denuded or heavily disturbed watershed conditions, and degraded scenic, watershed, and soil resources. **Approval of this THP as is currently proposed will add to the continued degradation of watershed and forest health.**

With these comments, CSERC fully recognizes SPI's right to manage and operate treatments on the company's private lands in a manner that complies with Forest Practice Rules and other applicable regulatory requirements. However, due to the **cumulative negative impacts** of this project combined with not only recent logging operations by SPI within the general project area over the past two decades, but also with the wide-ranging conversion of mixed, unevenage forest habitat into sterile young even-age tree plantations across adjacent areas, CSERC strongly asserts that it is inexcusable for CAL FIRE to ignore the cumulative effects of all of these additive impacts.

The Director needs to consider the significant impact of all of this THP and all the adjacent even age treatments to the project area. This THP is not simply one effect, but it is part of a series of cumulative effects from SPI forest treatments that have taken place and continue to take place throughout the overall forest region overlapping with this specific THP project area..



Project area is in the yellow circle - surrounded by a patchwork of heavily logged areas.

Our center urges the Director to coordinate with CDFW to develop an appropriate mitigation plan to decrease the impacts of this THP combined with past, present, and foreseeable future projects to create negative cumulative effects to below a level of significance.

Caitlyn Rich

Caitlyn Rich, Biologist

John Buckley

John Buckley, Executive Director

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References:

California Department of Fish and Game. 2010. A Status Review of the Fisher (*Martes pennanti*) in California.

Fish and Wildlife Service. 2020. Endangered and Threatened Wildlife and Plants; Endangered Species Status for Southern Sierra Nevada Distinct Population Segment of Fisher. The Daily Journal of the United States Government. Available at: https://www.federalregister.gov/documents/2020/05/15/2020-09153/endangered-and-threatened-wildlife-and-plants-endangered-species-status-for-southern-sierra-nevada

State of California. 2007. *Water Quality Control Plan for the Sacramento and San Joaquin River Basins.* California Regional Water Quality Control Board, Central Valley Region, Sacramento, CA. October 2007. Available at: http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr.pdf

Vance, Julie A. – Regional Manager (CDFW). Letter to Kiniery, Kevin, Review Team Chair (California Department of Forestry and Fire Protection). Oct. 20, 2020. Memorandum: First Review for Timber Harvesting Plan 4-20-00185TUO.

End of Letter of Concern.

Letter of Concern #2:

May 4, 2021

Forest Practice Program Manager
CAL FIRE
1234 East Shaw Avenue
Fresno, California 93710

Dear Director,

The following comments concern the **Cumulative Effects from Wildfire Risk and Hazard** regarding the 4-21-00047-TUO, Cobbler THP.

Cobbler THP consists of 380-acre timber harvest of which 212 acres is alternative prescription harvest. The alternative prescription harvest described is for all intent and purposes are clearcuts harvested in 20 acre groupings. The Cobbler THP area is located approximately one mile east of the South Grove of Calaveras Big Trees State Park and approximately six miles southeast of Dorrington, California in Tuolumne County. Should a wildfire occur as a result of this timber harvesting, The State park and the community of Chester would be immediately threatened, and has the potential of creating another Camp Fire, Paradise, California tragedy.

Sections IV, pages 193 -197 of the Cobbler THP (Wildfire Risk and Hazard) describes the THP as being in a very high fire severity hazard zone. Aside from the 123 acres of fuel breaks, the post-harvest stocking will consist of an even-age managed forest.

Given the extensive clearcutting and harvesting operations that have taken place in this area alone in the past 10 to 20 years, there are significant wildfire risks and hazards caused by the proposed project. There are a number of forest fire studies that show clearcut harvesting and subsequent even-age tree plantations leads directly to increase in the intensity and spread of wildfire

Timothy Ingalsbee of the Western Fire Ecology Center has found that commercial logging removes the least flammable portion of trees-their main stems or "trunks," while leaving behind their most flammable portions-their needles and limbs, directly on the ground. Untreated logging slash can adversely affect fire behavior for up to 30 years following the logging operations.

In addition, scientific studies have shown that the "overstory" tree canopy moderates the "microclimate" of the forest floor. This reduction of the tree canopy which occurs in clearcut, exposes the forest floor to increased sun and wind, causing increased surface temperatures and decreased relative humidity. This in turn causes surface fuels to be hotter and drier, resulting in faster rates of fire spread, greater flame lengths and fire line intensities, and more erratic shifts in the speed and direction of fires.

Small-diameter surface fuels (such as those even-age plantations younger than ten years) are the primary carriers of fire. Current fire spread models do not even consider fuels greater than three inches in diameter because it is mainly the fine-sized surface fuels that allows fire spread. Commercial logging operations remove large-diameter fuels which are naturally fire resistant, and replaces them with even-age plantations and fire-prone small-diameter fuels. These timber plantations are usually comprised of

densely-stocked, even-aged stands of young conifers that are extremely flammable and vulnerable to catastrophic fire effects.

On page 197, the PRF states that "altering the forest fuels through conversion, reduction and Isolation (i.e., even-age management) is the only proactive option available that can help reduce the potential rate of spread and intensity of large wildfires". This false assumption runs contrary to the known facts about the Camp Fire. Here, before reaching the town of Paradise, the Camp Fire had to first burn through more than 30,000 acres that ten years earlier, had burned and was salvaged logged (Butte Fire, 2008). These acres subsequently were restocked using even-age plantation trees. This fire raced through this logged area in a matter of minutes giving very little warning to residents of Paradise.

Currently, the State of California is facing a severe fire season. Should another Camp Fire occur here and destroy Dorrington, or severely burn Calaveras State Park, the responsibility of such a fire will fall directly on the shoulders of CALFIRE. It will be your failure to adequately address these fire risks, and hazards using the most current, peer reviewed studies. Accordingly, I recommend that you reject this THP until these fire issues can be addressed and corrected.

Sincerely,

Perry Metzger
3001 Tanya Court
Sacramento, California 95826

End of Letter of Concern #2