OFFICIAL RESPONSE TO SIGNIFICANT ENVIRONMENTAL POINTS RAISED DURING THE TIMBER HARVESTING PLAN EVALUATION PROCESS

FROM THE DIRECTOR OF THE CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION (CAL FIRE)

TIMBER HARVESTING PLAN (THP) No:	1-21-00007-SON
SUBMITTER:	Marvin Nobles
COUNTY:	Sonoma
END OF PUBLIC COMMENT PERIOD:	May 20, 2021
DATE OF RESPONSE AND APPROVAL:	August 20, 2021

The California Department of Forestry and Fire Protection (CAL FIRE) serves as the lead agency in the review of Timber Harvesting Plans. These plans are submitted to CAL FIRE, which directs a multidisciplinary review team of specialists from other governmental agencies to ensure compliance with environmental laws and regulations. As a part of this review process, CAL FIRE accepted and responded to comments, which addressed significant environmental points raised during the evaluation of the plan referenced above. This document is the Director's official response to those significant environmental points, which specifically address this Timber Harvesting Plan. Comments, which were made on like topics, have been grouped together and addressed in a single response. Remarks concerning the validity of the review process for timber operations, questions of law, or topics and concerns so remote or speculative that they could not be reasonably assessed or related to the outcome of a timber harvesting operation, have not been addressed.

Sincerely,

James Strong
Forester II, Forest Practice
RPF #2689

Staff Forester

cc: RPF, Unit, File; Timber Owner, Timberland Owner and/or Submitter
CP, CDFW, DPR, & RWB

https://caltreesplans.resources.ca.gov/caltrees/caltrees.aspx

PUBLIC NOTIFICATION

To inform the public of this proposed Timber Harvesting Plan (THP) and determine if there were any concerns with the plan the following actions were taken:

- Notification of the receipt of a timber harvesting plan was sent to the adjacent landowner(s).
- Notice of the receipt of the plan was submitted to the county clerk for posting with other environmental notices.
- Notice of the plan was posted at the Department's local office and also at the regional office in Santa Rosa.
- Notice of the receipt of the THP was sent to those organizations and individuals on the Department's list for notification of plans in the county.
- A “Notice of the Intent to Harvest Timber” was posted near the plan site.

THP REVIEW PROCESS

The laws and regulations that govern the Timber Harvesting Plan 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 and Fire Protection (the Forest Practice Rules) which are contained in the California Code of Regulations (CCR).

The Forest Practice 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:

- Timber Harvesting Plan contents and the Timber Harvesting Plan 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
- Coastal Commission Special Treatment Areas
- Use, construction and maintenance of logging roads and landings
- County-specific rules

When a THP is submitted to the Department, it undergoes a multidisciplinary review consisting of several steps. In addition to CAL FIRE, the Review Team members include representatives of the California Department of Fish and Wildlife (CDFW); the appropriate Regional Water Quality Control Board (RWQCB or RWB); California Geological Survey (CGS); the Department of Parks and Recreation (DPR); the appropriate County Planning office; and if within their jurisdiction, the Coastal Commission (CC) (14 CCR §1037.5(a)). Once submitted the Director determines if the plan is accurate, complete, and in proper order, and if so, files the plan (14CCR §1037). In addition, the Review Team determines whether a Pre Harvest Inspection (PHI) is necessary, and what areas of concern are to be examined during the inspection (14 CCR §1037.5(g)(1)).

If the plan is accepted for filing, and a PHI is determined to be needed, a field review is conducted to evaluate the adequacy of the THP. All agency personnel who comprise the multidisciplinary Review Team are invited to attend the PHI as well as other experts and agency personnel whom the Department may request. During this field review, additional mitigation and/or recommendations may be formulated to provide greater environmental protection. These recommendations are forwarded to the RPF along with the Review Team member's PHI Report. The RPF will respond to the recommendations made and forward these to the Region office and Second Review Team Chair.

A Second Review Team meeting is held where members of the multidisciplinary Review Team meet to review all the information in the plan, and develop a recommendation for the Director (14 CCR §1037.5(g)(2)). Prior to and/or during this meeting they examine all field inspection reports, consider comments raised by the public, and discuss any additional recommendations or changes needed relative to the proposed THP. These recommendations are forwarded to the RPF. If there are additional recommendations, the RPF will respond to each recommendation, and forward those responses to the regional office in Santa Rosa.

The representative of the Director of the Department reviews all documents associated with the proposed THP, including all mitigation measures and plan provisions, written correspondence from the public and other reviewing agencies, recommendations of the multidisciplinary Review Team, and the RPF's responses to questions and recommendations made during the review period. Following consideration of this material, a decision is made 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 two more years, for a total of seven years.

Prior to commencing logging operations, the Registered Professional Forester must meet with the licensed timber operator (LTO) to discuss the THP (CCR §1035.2); a CAL FIRE representative may attend this meeting. The Department makes periodic field inspections to check for THP and rule compliance. The number of inspections depends upon the plan size, duration, complexity, and the potential for adverse impacts. Inspections include but are not limited to inspections during operations pursuant to Public Resources Code (PRC) section 4604, inspections of completed work pursuant to PRC section 4586, erosion control monitoring as per PRC section 4585(a), and stocking inspection as per PRC section 4588.

The contents of the THP, the Forest Practice Act, and rules, provide the criteria which CAL FIRE inspectors use to determine compliance. While the Department cannot guarantee that there will be no violations, it is the Department's policy to vigorously pursue the prompt and positive enforcement of the Forest Practice Act, the Forest Practice Rules, related laws and regulations, and environmental protection measures that apply to timber operations on non-federal land in California. This enforcement is directed primarily at preventing forest practice violations, and secondarily at prompt and adequate correction of violations when they occur.

The general means of enforcement of the Forest Practice Act, the rules, and other related regulations range from the use of violation notices, which require corrective action, to criminal

proceedings through the court system. Timber operator and Registered Professional Forester licensing action may also be pursued. Most forest practice violations are correctable and the Department's enforcement program assures correction. Where non-correctable violations occur, criminal action is usually taken. Depending on the outcome of the case and the court in which the case is heard, some sort of environmental corrective work is usually done. This is intended to offset non-correctable adverse impacts.

Once harvesting operations are finished, a completion report must be submitted certifying that the area meets the requirements of the rules. CAL FIRE inspects the area to verify that all aspects of the applicable rules and regulations 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.

FOREST PRACTICE TERMS

ASP	Anadromous Salmonid Protection	FPR	California Forest Practice Rule
BMP	Best Management Practice	LTO	Licensed Timber Operator
BOF	California Board of Forestry and Fire Protection	WLPZ	Watercourse and Lake Protection Zone
CAL FIRE	Calif. Dept. of Forestry & Fire Protection	NCRWQCB	North Coast Water Quality Control Board
CCR	California Code of Regulations	NSO	Northern Spotted Owl
CCSTA	Coastal Commission Special Treatment Area	OR	Official Response
CDFW	California Department of Fish and Wildlife	PC	Public Comment
CEG	Certified Engineering Geologist	PHI	Pre-Harvest Inspection
CEQA	California Environmental Quality Act	PRC	Public Resources Code
CESA	California Endangered Species Act	RWB	Regional Water Quality Control Board
CIA	Cumulative Impacts Assessment	RPF	Registered Professional Forester
CGS	California Geological Survey	STA	Special Treatment Area
CSDS	Controllable Sediment Discharge Sources	THP	Timber Harvesting Plan
DBH/dbh	Diameter Breast Height	TPZ	Timber Production Zone
DDD	Director’s Determination Date	USFWS	U.S. Fish and Wildlife Service
DPR	Department of Parks and Recreation	WAA	Watershed Assessment Area
ECA	Equivalent Clearcut Area	WDR	Waste Discharge Requirements
ECP	Erosion Control Plan		

[sic] Word used verbatim as originally printed in another document. May indicate a misspelling or incorrect word usage

BACKGROUND

Timber Harvesting Plan (THP) # 1-21-00007-SON "Nobles" proposes to harvest timber on 96 acres of Marvin Noble's timberland using the selection silvicultural method. The THP was originally received on January 16, 2021 and was returned on January 28, 2021 due to an error an error on the Notice of Intent. It was re-submitted on submitted on February 10, 2021 and accepted for filing on February 18, 2021. A Preharvest Inspection (PHI) was conducted on March 10, 2021. Attendees on the PHI included Elliott Brooks, (RPF), Justin Fitt (NCRWQCB), Julie Coombes (CDFW), and James Bawcom (CAL FIRE Inspector). The Final Interagency Review (aka Second Review) occurred on April 29, 2021. The Second Review Chair requested ten revisions to the THP during the meeting. The RPF responded to those recommendations, and on May 10, 2021 the Second Review Chair accepted the revisions. The public comment period then ended on May 20, 2021. The initial deadline for the Director's Determination Deadline (DDD) was set for June 10, 2021 per 14 CCR § 1037.4. Multiple extensions were granted extending the DDD to July 30, 2021 in order to address public comments, generate the Official Response (OR) to concerns brought up by the public, and evaluate the Plan for final approval.

PUBLIC COMMENT SUMMARY

During the public comment period for this THP as described above, there was 1 public comment letter received at the CAL FIRE Region Headquarters in Santa Rosa. This public comment brought up concerns that are addressed in this Official Response (OR). General concerns are grouped by subject matter and followed by the Department's response. Original text taken directly from the public comments, rules, reports, or the THP are presented as italicized text. Words that are emphasized in responses have underlined font. Unique individual concerns from a public comment letter are addressed after the general concerns immediately following that comment along with referencing any general comment responses that may be associated with that response. The public comments are identified with the CAL FIRE "PC" code. A copy of the original letters sent to the Department are viewable through the Department's online Forest Practice Database CalTREES. 8 other public comments came in after the public comment period had closed. These public comments were reviewed to see if they contained significant new information, which they did not.

CalTREES instructions: navigate to https://caltreesplans.resources.ca.gov/caltrees/caltrees.aspx Click the search icon at the top of the page, then type the Plan # in the Record Number box (county identifier not needed). Under the Document Number column, select the Plan Number for the "Timber Harvest Plan" Type. Below the "Record Details" should be a list of attachments for the Plan. (Note: if there are a substantial number attachments, or attachments with large file sizes, it may take some time to load) The Public Comments are labeled under "Record Type" and are in pdf format, usually with a "PC" label.

SUMMARY OF SIGNIFICANT ENVIRONMENTAL GENERAL CONCERNS WITH RESPONSES

1. CONCERN: No baselines or thresholds are established to determine significance of impact in regards to cumulative impacts.

CEQA Guideline section 15064.7 relates to Thresholds of Significance. This section states that; "Each public agency is encouraged to develop and publish threshold of significance that the agency uses in the determination of the significance of environmental effects." At the present time, no such thresholds have been established in the Forest Practice Act or Rules. The development of thresholds for every watershed in California is a monumental task. Neither CAL FIRE or other review team agencies have sufficient funding and staff to complete this monumental project. Nor do the agencies have sufficient funding or staff to measure these variables in every watershed in California. In addition, it would not be sufficient to simply measure various watershed variables before and after harvest. Years of previous data as well as many years post-harvest data would be needed to sort out the effects of timber harvesting from underlying variables such as weather, geology, and other watershed impacts which are the dominant drivers in a watershed. This direction is for agency level action and is beyond the scope of the review of a single harvesting plan. A concern of this scope would be better directed to the Board of Forestry with a suggestion that the rules be revised to include such thresholds.

Baselines and thresholds are not terms defined in the Forest Practice Rules. The descriptions found in the THP, the results of the preharvest inspection (documented in reports by CAL FIRE and other agencies), and review team meetings are the sources of information used for the Department to make a determination that the no significant unmitigated cumulative effects are likely to occur.

Another concern noted by the comment writer is the specific lack of quantitative data in the plan, or more specifically, the lack of quantitative data in specific areas. The commenter notes the lack of site-specific scientific studies or research, along with the data used to reach scientific conclusions. The comment writer takes exception to the use of qualitative information, based upon the observations of Registered Professional Foresters claiming it to be subjective and not sufficient upon which to make determinations on potential plan impacts.

Faced with similar comments, the Board of Forestry addressed this issue during the rulemaking for Technical Rule Addendum No.2 in 1991. Final Statement of Reasons (FSOR) for Technical Rule Addendum No.2 (1/18/91) Pages 56-57 (In response to concerns on the need for Quantitative Data for establishing baselines):

Response - The Board reviewed several drafts of regulations before noticing the proposed language. One of the drafts offered to the Board by the Department contained a set of required measurements which could be reproduced as suggested.

Public comment received by the Board from the agencies and public convinced the Board that there is not a set of quantitative values which can withstand peer review in all areas which are affected by cumulative effects. The breadth of this expertise ranges from geologists, hydrologists, soils scientists, and various biologists.

Given this, the Board relied upon the experience of others in the field of cumulative effects and decided that a qualitative method would be most reliable for the decision maker. Most other agencies currently use the qualitative method which means that an independent analysis is conducted on each project. In this method available data is collected and evaluated to determine that defined topic and issue areas (i.e. stream bank or bed condition) are considered and a condition identified. There then are certain conditions which can be identified. One example is a lack of certain stream biota which indicate the threshold of significant cumulative effects has been reached.

To date, the quantitative methods identified by the Board rely upon numbers which are assigned on the basis of professional judgment. This means that it is only a modified qualitative analysis at best. An example of this is the Chatoian Method of Equivalent Roaded Acres being developed for use by the United States Forest Service. Recent field evaluations have shown that there is little relationship between Equivalent Roaded Acres and the conditions of the water quality in a watershed.

The commenter alleges that CAL FIRE has failed to establish monitoring programs implying that logging impacts are not understood. However in May of 2019, the Exemption and Emergency Notice Monitoring Pilot Project Report was released. While numerous instream monitoring projects have occurred all over the north coast (Caspar Creek, Little Creek, SF Wages Creek, Railroad Gulch, etc.), the following is from pages 5 and 6 of 2019 report regarding monitoring.

Ten main programs or projects have been completed in the past 40+ years documenting post-harvest hillslope erosion. Brief summaries and important conclusions from these efforts are provided in Table 1. These monitoring programs and projects have demonstrated that both California's water quality-related FPRs, and their implementation and effectiveness, have improved considerably over the past 40 years. In general, when the Rules are properly implemented, they are effective in protecting water quality. Implementation rates are similar to those reported for other western states (Ice et al. 2004, Ice et al. 2010). Instream monitoring conducted at the Caspar Creek Experimental Watershed has confirmed that implementation of the modern FPRs (after 1975) has substantially reduced water quality impacts related to forest management (Ziemer 1998, Rice et al. 2004, Cafferata and Reid 2013). Hillslope monitoring results through 2013 have also shown, however, that improvements are needed in watercourse crossing design, construction, and maintenance, and in road drainage—particularly near stream crossings. Expanded Exemption and Emergency Notice monitoring in 2019 and beyond, as well as a second phase of FORPRIEM (Forest Practice Rules Implementation and Effectiveness Monitoring), will provide data on the updated operational road rules implemented on the ground in January 2015.

Monitoring has been and continues to be an important mission for CAL FIRE.

Monitoring is also done on a more local level by CAL FIRE foresters who regularly inspect harvest operations in their jurisdictions. In ASP watersheds, a three year maintenance period exists after timber operations have been completed, during which time, inspections can occur.
Lastly, the State Water Resources Control board has a process for the development of Total Maximum Daily Loads (TMDLs) which relates to thresholds and baselines. Extensive information regarding TMDLs can be found on the agency's website.

https://www.waterboards.ca.gov/water_issues/programs/tmdl/

Information regarding the Gualala River watershed TMDL can be found at the following:

https://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/gualala_river/

According to page 17 (5.2. Allocations) of the Gualala River TMDL, the current total load is 1,220 tons/mi2/yr and the total load allocation is 475 tons/mi2/yr. The RPF provided on pages 202 to 213, in Section IV of the THP, an ECP. This ECP, another avenue in which monitoring is accomplished, provides to NCRWQCB a road inventory of controllable sediment sources, Map Point descriptions and treatments, general prevention and minimization measures, and operating periods. Furthermore, the ECP provides a fuel management plan, and an inspection and reporting plan. This ECP outlines and describes on page 206 how nearly 400 cubic yards of crossing fill is going to be treated. An ECP is used to determine compliance with the correlating TMDL, to ensure that sediment production thresholds are not exceeded.

CAL FIRE has reviewed and considered all pertinent evidence and has determined that no significant adverse cumulative impacts will result from implementing this THP regarding concern #1.

2. CONCERN: "Copy and Paste Boilerplate" language is proof Cal Fire does not require cumulative impacts analysis.

This concern does not consider that RPFs are often describing the same watershed, well verified processes, and other generally accepted descriptions of the same area. Good analysis has never precluded the use of well accepted standardized discussions and rationales. Appropriate and suitable language can take advantage of, and utilize, a previously peer reviewed description, or generally accepted discussion, regarding, for instance, identical watersheds, species, or even cumulative impacts.

CAL FIRE has reviewed and considered all pertinent evidence and has determined that no significant adverse cumulative impacts will result from implementing this THP regarding concern #2.

3. CONCERN: Cal Fire Reviewers are inherently biased due to past associations with the RPFs.

The commenter believes that CAL FIRE reviewers are biased and may have personal relationships or past work or school experience with the Registered Professional Forester (RPF) submitting the proposal. The concern is that there is an immediate and undeniable implicit and unconscious bias benefitting the submitting RPF. While this is not a significant environmental concern, the Department finds it necessary to address this comment.

The majority of the CAL FIRE review team members are RPFs. There are approximately 1,130 valid RPF licenses in California as of July 2021, compared to 266,000 licensed attorneys in the state. Currently, there are only three universities in California that offer a bachelor's degree in forestry. RPFs range in age from the mid-twenties to late-seventies. Some of CAL FIRE's current review team members have obtained work experience from the private timber industry, small forestry consultants, federal agencies, or from within CAL FIRE. This brings a wide range of experience to CAL FIRE forestry reviewers bringing a diverse range of knowledge to the Department, ultimately a positive influence on the Review Team. Due to the limited number of universities offering forestry degrees and mix of previous work experience, it is not uncommon for a review team member and an RPF submitting a Plan for review to have a personal overlapping forestry work background or common alma mater. However, this in no way would indicate favoritism or bias. Ethics are a critical element of being an RPF, and California Foresters are held in high esteem in the forestry industry nationally and internationally due to the rigorous ethical standards to which RPFs in California must adhere. CAL FIRE is a reputable government agency and prides itself on its professionalism. The State of California has policies regarding conflict of interest. There is no evidence that any Review Team member conducted themselves in a biased manner.

The review of timber harvest plans is completed by a multidisciplinary review team (14 CCR 1037.5). The review team members have the opportunity to provide recommendations to the plan and make a determination whether there may be a significant adverse effect on the environment (14 CCR 1037.5(b):

> *In the event that any member of the review team concludes that the plan as filed would have a significant adverse effect on the environment, that member shall explain and justify this conclusion in writing as specifically as possible. The member shall provide in writing suggested site-specific mitigation measures, if any, that will substantially lessen the Impacts*

For THP 1-21-00007 SON, representatives from the NCRWQCB, CDFW, and CGS provided first review comments, attended the PHI, and provided PHI recommendations. This multidisciplinary review process diversifies the review of a plan, adding expertise from other natural resource fields. Additionally, the writer of this response has no affiliation, prior contact, or professional experience with the RPF who wrote this THP. For these reasons, CAL FIRE believes the review process provides a balanced approach and reduces the alleged bias that is a concern in the

public comment letter. The CalTREES website provides the transparency that is requested in the public comment letter.

4. CONCERN: Information in the plan is incorrect, incomplete and misleading regarding the cumulative impacts assessment.

The commentor takes issue with Technical Rule Addendum No 2, suggesting that it falls short of providing the necessary framework for an adequate assessment. This THP however, has followed the Technical Rule Addendum No 2, and issues the commenter may have would be taken up with the Board of Forestry, and would be outside of the scope this OR.

The commentor also heavily relies on publicly available arial imagery to allege overharvest, poor harvesting practices and illegal/undocumented harvests. The concern suggests that the cumulative impacts assessment does not consider and assess a number of these illegal/undocumented harvests. The commentor provides imagery to support the claim of illegal/undocumented harvest. These harvests have been determined by CAL FIRE to be legal and permitted projects, and were harvests done under the exemption permitting process 14CCR 1038 (b), "10% Dead, Diseased and Dying". Exemption permits follow an abbreviated process as they are generally considered essential in nature, beneficial to the community and environment, and can often be considered to lessen cumulative impacts.

Page 23 of the public comment, the commenter seems to be unaware as to how and why CAL FIRE arrived at the size of planning watersheds for the purposes of determining cumulative impacts. Planning watershed is defined in the FPRs.

> ***Planning Watershed*** *means the contiguous land base and associated watershed system that forms a fourth order or other watershed typically 10,000 acres or less in size. Planning watersheds are used in planning forest management and assessing Impacts. The Director has prepared and distributed maps identifying planning watersheds plan submitters must use. Where a watershed exceeds 10,000 acres, the Director may approve subdividing it. Plan submitters may propose and use different planning watersheds, with the Director's approval. Examples include but are not limited to the following: when 10,000 acres or less is not a logical planning unit, such as on the Eastside Sierra Pine type, as long as the size in excess of 10,000 acres is the smallest that is practical. Third order basins flowing directly into the ocean shall also be considered an appropriate planning watershed.*

This definition requires plan submitters to use these planning watersheds. Any proposal to use a different planning watershed would require the Director's approval. The RPF has followed this guidance and the THP proposes 96 acres of selection harvest within the CALWATER version 2.2 #1113.850103 "Middle South Fork of the Gualala River" watershed, 7,910 acres; and additionally, CALWATER version 2.2 #1113.840301 "Haupt Creek", 6,043 acres.

CAL FIRE has reviewed and considered all pertinent evidence and has determined that no significant adverse cumulative impacts will result from implementing this THP regarding concern #4.

5. CONCERN: The 10% Dead, Diseased and Dying permits are being abused or executed improperly.

The commenter attempts, using publicly available arial imagery, to establish that illegal harvesting has been undertaken. These areas have not been harvested under an illegal permit, but rather, as the commenter surmises, an exemption permit 14 CCR 1038 (b) commonly called a "10% Dead, Dying or Diseased". The commenter correctly notes that the 10% is a per average volume per acre and focusing a 10% from a total acreage onto few acres would not be in accordance with the rule. Should an overharvest occur as part of 10% Dead, Dying or Diseased exemption permit, the matter would be a matter for the local Cal Fire inspector and is outside the scope of this project. In this instance, the local Cal Fire inspector has been notified of the allegation.

6. CONCERN: Harvest rates in the watershed are excessive.

The past and present projects analysis is conducted within the watershed assessment area (WAA), generally the intersecting State Planning Watersheds (version 2.2) with the harvest area. The Past and Present projects tables correctly list the harvest plans in the WAA during the last 10 years as required. In Section IV, starting on page 111 of the THP summarizes the harvest history activity, and on page 114 a rate of harvest discussion begins. The commentor provides a graph demonstrating that prior to 2012, the watershed saw relatively little harvest activity, but fails to acknowledge that due to past harvesting activity, fire history, or other natural processes, often an area or watershed will be close in age and become available to harvest at essentially the same time. An uptick in activity within a watershed after a certain date is common. The commentor does not appear to have considered this fact.

There is a process available to the public outlined in the 14 CCR 916.8, for which a watershed can be determined to be a "sensitive watershed". This process is clearly outlined with a nomination, notice, screening and public hearing process. This process can create special rules for a watershed that has been determined to be sensitive. The commentor may want to consider this opportunity if they believe parts of the Gualala watershed warrants special protections due to harvest rates.

The Department, as lead agency, shall make the final determination regarding assessment sufficiency and the presence or absence of significant adverse Cumulative Impacts. This determination shall be based on a review of all sources of information provided and developed during review of the Plan. CAL FIRE has reviewed and considered all pertinent evidence and has determined that no significant adverse cumulative impacts will result from implementing this THP regarding rate of harvest concerns.

7. CONCERN: Logging is causing the Harmful Algae Bloom.

The commentor is concerned that timber harvesting has led to the October 2020 Harmful Algae Bloom. Stream temperatures are a result of a complicated ecosystem process including forestry, geology and hydrology. The THP discusses potential temperature impacts on page 119. Forestry primarily affects stream temperature by changing shade canopy. Shade from WLPZs moderates stream temperatures through retention of stream canopy. Excessive removal of riparian canopy could lead to excessive summer temperatures that may be lethal to aquatic invertebrates and fish. The effect on winter water temperatures is usually less pronounced due to reduced solar radiation during the winter and cooler temperatures. The retention of WLPZs even along clearcut units been found to be effective in shading the streams. The amount of shade canopy and distance of WLPZs increases as the watercourse classifications change. For example, small class III watercourses that are capable of transporting sediment during the winter require less shade canopy due to their small stream size and intermittent nature. Class II watercourses, which support non-fish aquatic life, require more shade canopy and wider buffers. Class I watercourses, which support fish habitat, require the widest buffers with the highest shade canopy. The ASP rules were established based on scientific review and have established WLPZs that maintain current stream temperatures through shade canopy requirements.
In addition to the effects of canopy retention on stream temperature, groundwater and bank storage contributions to stream flow are not subject to changes in temperature from canopy cover. The THP discloses Class I, II and III watercourses and the retention buffers on these watercourses are thoroughly outlined starting on page 45 with additional discussion on page 119.

Therefore, CAL FIRE determined that the proposed timber operations are appropriate based on the selection silviculture, and standard WLPZ measures. It is unlikely that any change in water temperature can be attributed to the proposed THP.

Regarding the Gualala River specifically, according to online reporting from the California Water Quality Monitoring Council website there has been one reported incident in the Gualala River.

> *On 10/11/2020 the Water Boards received a report from an individual who developed skin symptoms after contacted attached algal mats in the Gualala River. Caution advisory and avoid contact with or ingestion of any algal material.*

Harmful algal blooms can be dangerous or lethal to humans, pets, and wildlife. These algal blooms are the result of a variety of factors. The bacteria prefer standing water, low turbidity, and warm temperatures

The commentor is concerned that timber harvesting on THP 1-21-00007-SON would accelerate the problem by reducing shade canopy, reducing the filtration of nutrients and increasing erosion to the stream system. The Department has concluded that the selection silviculture system and WLPZ protections, will mitigate temperature increases. In addition, the THP has been designed

to minimize erosion to the stream system. The THP provides mitigations for these potential impacts through erosion control measures in Item 18, winter period restrictions in Item 23, road construction and maintenance standards in Item 24, and watercourse protection in Item 26. Note that the THP does not propose using phosphate fertilizers and that a significant amount of forest cover and ground cover will remain post-operations to filter nutrients.

The Gualala River encompasses 42,126 acres. The proposed THP proposes 96 acres of selection harvest within the CALWATER version 2.2 #1113.850103 "Middle South Fork of the Gualala River" watershed, 7,910 acres; and additionally, CALWATER version 2.2 #1113.840301 "Haupt Creek", 6,043 acres. The harvest area makes up less than .7% of the two planning watersheds, and a very small part of the entire Gualala River.

The Department has concluded that the THP will not increase the likelihood of harmful algal blooms through THP mitigations that prevent temperature and sediment impacts. The harmful algal blooms are more likely a result of several factors, possibly including climate change and weather patterns that decrease summer stream flow when combined with other anthropogenic influences.

8. CONCERN: This THP is not following the California Wild and Scenic Rivers Act.

RESPONSE: The Gualala River is classified under the Wild and Scenic Rivers Act PRC 5093.545, as recreational (PRC 5093.545(n)) along the main stem from the confluence of the North and South Forks to the Pacific Ocean.

This THP is approximately 20 miles upstream from the stretch of the Gualala River that falls under the California Wild and Scenic Rivers Act. This THP is not required to mention the act.

9. CONCERN: This THP fails to assess impacts to the water cycle, including fog drip, from logging.

The commentor believes cumulative effects to the water cycle and fog drip were not addressed adequately in the THP. The commentor acknowledges that fog drip is addressed, and cites the page, but believes the discussion should be more robust and is flawed. A main concern with timber harvesting is its potential effect on peak flow which a required element of a cumulative impact analysis. This is addressed starting on page 121 of the THP. The THP includes past research on peak flow and how the proposed uneven-aged silviculture is not expected to result in downstream peak flow increases.

In northwestern California, Keppeler and Ziemer (1990) studied the effects of selective logging on summer low flows and water yield in the Caspar Creek watershed located on Jackson Demonstration State Forest. The North and South Fork weirs are situated about 4 miles from the Pacific Ocean. About 60 percent of the second-growth stand of redwood and Douglas-fir was tractor logged from 1971-1973. Significant <u>increases</u> in streamflow were detected for

both the annual period and the low flow season. Greater relative increases were observed for the summer low flow period, but these increases were short-lived in comparison to the overall increase in annual water yield. Beyond five years after the completion of logging, no significant summer flow increases were detected. Fog drip reduction from this level of selective harvest was not significant, since increases in summer low flow were observed. If there was a reduction in fog drip, it was offset by reductions in evapotranspiration.

On page 121, the RPF addresses fog drip, which is an important form of precipitation. The commenter cites a 1998 study by Dawson, but the THP cites a 1998 study by Zeimer on the effects of fog in the California redwood. The commenter argues that the timber harvest will remove this fog drip component by eliminating the trees. This THP does not propose to clearcut the forest and remove all the trees. The THP proposes uneven-aged management that will retain a well-stocked young growth forest with a minimum of 75 square feet of basal area per acre. CAL FIRE agrees with the RPF's conclusion on page 121 of the THP.

CAL FIRE has reviewed and considered all pertinent evidence and has determined that no significant adverse cumulative impacts will result from implementing this THP regarding fog drip and impacts to the water cycle.

10. CONCERN: This THP fails to assess impacts to climate change from logging.

A concern of this commentor is regarding climate change and its impacts from logging. The argument is that large trees, especially redwood trees, should be left, as they are good at sequestering carbon. CAL FIRE agrees that forests are an important part of the strategy for adapting to climate change and carbon sequestration. CAL FIRE has considered the requirements of AB32 and the CEQA Guidelines with respect to the need to scientifically estimate the level of GHG outputs for this THP. The THP discusses climate change and greenhouse gas assessment on pages 153-162. As shown in the analysis in the THP beginning on page 153, with the worksheets starting on page 158, this project is expected to result in 19,589 metric tons of CO_2 sequestered for the project over a 100-year period (204 metric tons per acre).

Global deforestation refers to conversion of forestland to other uses such as agriculture, residential and commercial uses, or other uses that do not continue to sequester carbon like intact forestland. The project area for THP 1-21-00007 SON is to remain a forested landscape, which will continue to sequester carbon. The forest soils and the aboveground biomass will continue sequestering carbon. The trees that are to be retained will continue to convert carbon from the atmosphere into leaves, branches, stems and roots. Root systems and leaf fall will maintain the carbon in the forest soils. The Plan provides for a healthy coniferous forest to be maintained on the site in the long-term and avoids adding to the delivery of "greenhouse gasses" to the atmosphere.

The unevenaged prescription will maintain trees of various size over the THP area and increase the vigor of residual trees, decreasing competition and making them less susceptible to insect

and diseases. Stewart and Sharma (2015), estimated carbon storage under various scenarios and forest types. They concluded that "managed (harvested and regenerated) forests provide more carbon sequestration benefits than let-grow forests when the benefits of the harvested products are accounted for. If all carbon sequestration benefits are counted, we project that California's private forests that are harvested and regrown for another 80 years will provide approximately 30% more total carbon sequestration benefits than forests left to grow for 80 years."

CAL FIRE has considered that, if the stands were left unmanaged, they would return to the "old growth" state after hundreds of years, and in that state would be sequestering more carbon than young growth forests. In isolation this argument may have some validity. However, timber management is not a closed system. Timber is harvested to meet a demand. In California, the demand for wood products results in billions of board feet of lumber imports into the state each year, accounting for a majority of California's wood use. Currently, the demand for lumber is so high that lumber imports from other countries is growing. The impact of taking industrial timberlands out of production in California simply shifts the harvest to another state or country. Assuming a similar carbon balance for the stands where the imported products are grown and manufactured this would add additional use of fossil fuel for the transportation of the wood products into the state. Thus, increasing the carbon footprint for California if wood imports were to increase.

CAL FIRE has considered Governor Newsom's Executive Order N-82-20 (2020), which seeks to combat negative impacts to biodiversity and climate change by engaging stakeholders across the state to inventory, assess, and protect biodiversity across the state. A key part of the order is to improve natural resource resiliency in face of climate change. CAL FIRE considers this THP's proposed uneven-aged management, a key to maintaining forest resiliency through active management. This management will maintain resilient forests, restore, and maintain current road systems, and maintain wildlife habitat.

CAL FIRE has reviewed and considered all pertinent evidence and has determined that no significant adverse cumulative impacts will result from implementing this THP regarding climate change and carbon sequestration.

REFERENCES

California's Wildfire and Forest Resilience Action Plan. Available on 03/23/2021 at https://fmtf.fire.ca.gov/media/cjwfpckz/californiawildfireandforestresilienceactionplan.pdf

2021 California Environmental Quality Act. *Statue and Guidelines.* Available on 03/23/2021 at 2021 California Environmental Quality Act (CEQA) Statute and Guidelines (califaep.org)

2021 California Forest Practice Rules and Forest Practice Act. Available on 03/23/2021 at https://bof.fire.ca.gov/media/3qebuoma/2021-forest-practice-rules-and-act_final.pdf

California Water Quality Monitoring Council website search for HAB Incident reports. Available on 03/23/2021 at
https://mywaterquality.ca.gov/habs/where/freshwater_events.html

Exemption and Emergency Notice Monitoring Pilot Project Report. May 7, 2019
https://www.researchgate.net/publication/335149799_Exemption_and_Emergency_Notice_Monitoring_Pilot_Project_Report

SUMMARY

The preharvest inspection held on March 10, 2021, concluded that the Plan was found to be in conformance after the successful completion of the agreed upon recommendations, which were incorporated into the Plan prior to approval.

The Second Review meeting held on April 29, 2021, concluded that the THP had certain significant cumulative impacts which were identified but were mitigated, and found to be in conformance with the Act and the Rules of the Board of Forestry and Fire Protection. It was recommended for approval on May 10, 2021.

The Department has reviewed the concerns brought up through the public comment process and has replied to them by this Official Response. This process has not demonstrated any new significant points that would warrant a recirculation of the Plan pursuant to 14 CCR § 1037.3(e), or a recommendation of nonconformance pursuant to 14 CCR § 1054. The THP states in Section I, under Item 13(b) “After considering the rules of the Board of Forestry and Fire Protection and the mitigation measures incorporated in this THP, I (the RPF) have determined that the timber operation will not have a significant adverse impact on the environment”. The Department finds that the RPF has sufficiently documented that there shall be no unmitigated significant impacts to the identified resources under this THP.

It is the Department’s determination that this THP, as proposed, is in compliance with the FPRs and has been through a detailed multi-agency review system. The discussion points and mitigation measures included in the THP have been found to be appropriate to address the concerns brought up by the public comment process. The conclusions reached by the Department and the other state resource agencies are based on decades of professional experience associated with the review of similar harvest plans.

From: Friends of the South Fork Gualala <info@fosfg.org>
Sent: Thursday, May 20, 2021 11:24 AM
To: Santa Rosa Public Comment@CALFIRE
Subject: THP 1-21-00007-SON "Nobles"
Attachments: Nobles_public_comment_with_attachments.pdf

Warning: this message is from an external user and should be treated with caution.

** Re-submitting with corrections

The attached public comment pertains to 1-21-00007-SON "Nobles".

This is a corrected version of our comments posted on 5/19/21 and supersedes that comment (that comment may be removed and replaced by this one).

Please post immediately received today Thursday May 20, 2021.

-Ethan Arutunian

Friends of the South Fork Gualala

To: CDF THP Review Team
SantaRosaPublicComment@fire.ca.gov
Attn: Director, Dominik Schwab

May 15, 2021

Public Comment on THP 1-21-00007-SON "Nobles"

I. Introduction

This comment is submitted to the California Dept of Forestry's (CDF) Timber Harvest Review Team regarding plan number 1-21-00007-SON named Nobles. This plan is inside the same Middle-South Fork Gualala River watershed planning area as the recently submitted Bootleg THP, 1-20-00203-SON, as well as the Haupt Creek watershed. All of the problems that the public wrote about regarding that plan are still present or exacerbated.

This additional plan continues the ongoing practice of providing no factual, valid cumulative impacts analysis and continues to ignore the downstream cumulative effects which were documented and raised in public comments previously, and therefore fails to 'include sufficient detail to enable those who did not participate in its preparation to understand and to consider meaningfully the issues the proposed project raises, as CEQA requires' Sierra Club v. Fresno (2018) 6 Cal.5th 502, 510. An approval of this plan by CDF will fail to uphold the environmental protection requirements of the California Environmental Quality Act (CEQA) and may trigger a legal challenge.

The following comments are submitted on behalf of Friends of the South Fork Gualala (FSFG). Please consider these comments as significant environmental concerns raised during the review team process.

Our comments and substantive evidence show that the material submitted by the RPF:

1. is largely not relevant to the logging plan, the watershed area affected by the plan, or plan-related adverse cumulative watershed effects;
2. contains confusing, false, contradictory, insufficient, and purposely misleading information;
3. fails entirely to address the significant environmental concerns raised here;
4. is based on subjective, unsupported conclusions and speculation;
5. does not provide a substantial, factual, evidentiary basis for CDF to determine that this logging plan is in conformance with the Forest Practice Act and Rules and will not add to significant cumulative impacts which already exist. In light of the full record, approval of this plan would be an abuse of discretion. A full list of additional information and materials being submitted as part of these comments is at the end of this document.

II. Friends of the South Fork Gualala Background

Friends of the South Fork Gualala (FSFG) is an unincorporated association whose mission is to conserve, protect, and restore the South Fork Gualala River watershed and neighboring

watersheds. Its members promote science and evidence-based solutions to limiting the effects of climate change on the coastal river watersheds and endangered wildlife. The group is actively engaged in many aspects of conservation, including establishing a historical record of logging in the entire Gualala River basin, conducting data collection and public outreach, and advocating before state and local agencies.

III. CDF's Ongoing Practices Demonstrate a Prejudicial Abuse of Discretion

A. CDF practices do not require, gather or disperse information needed by their agency and the public to make informed decisions.

The Bootleg logging plan, 1-20-00203-SON, which is slightly north of this plan and in the same planning watershed, was approved in April 2021. During the comment period for that plan we requested that CDF provide us with the quantitative analysis of how they determine cumulative effect, thresholds, and baselines, for the planning watershed. CDF's official response was:

> "PRC 15064. 7 relates to Thresholds of Significance. This code section states that; 'Each public agency is encouraged to develop and publish threshold of significance that the agency uses in the determination of the significance of environmental effects.' At the present time, no such thresholds have been established in the Forest Practice Act or Rules. This direction is for agency level action and is beyond the scope of the review of a single harvesting plan. A concern of this scope would be better directed to the Board of Forestry with a suggestion that the rules be revised to include such thresholds."

The response is written to avoid the question of cumulative effects entirely, which is completely contrary to CEQA law. By refusing to consider the impacts of a single harvest plan, this response also demonstrates the "postage-stamp" or 'parcel-by-parcel' approach CDF takes when considering cumulative impacts on watershed planning areas.

What CDF failed to include in their above response was the next paragraph in PRC 15064. 7, which continues:

> "A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant."

At the present time, no such thresholds have been established in the Forest Practice Act or Rules, therefore it is absolutely CDF's responsibility to develop those thresholds. By failing to provide a single threshold of significance, and avoiding the question entirely, CDF has effectively taken the position that they do not consider any environmental effects to be significant in any individual THP proposal. This is a violation of CEQA law.

An important part of any cumulative impacts analysis is comparing current conditions with past conditions to track what changes are occurring. That is the definition of cumulative effects. The Nobles THP continues on the path of significant adverse effects being amplified because no

baselines or thresholds are ever set or used, nor will CDF actually determine what to use or how to use it.

The California Code of Regulations addresses logging plans (THPs):

14 CCR 897 The information in [THPs] shall also be sufficiently clear and detailed to permit adequate and effective review by responsible agencies and input by the public. . .

14 CCR 898.2 The Director shall disapprove a plan as not conforming to the rules of the Board if ... there is evidence that the information contained in the plan is incorrect, incomplete or misleading in a material way, or is insufficient to evaluate significant environmental effects.

CDF is violating both of these regulations by not collecting or providing sufficient information needed by the public to effectively review the plan or CDF's process. Withholding this information also does not provide the public with sufficient information to ascertain whether CDF has adequately evaluated significant environmental effects. This practice is part of CDF's ongoing pattern of dismissing the public and refusing to answer questions the public asks.

The Board of Forestry is responsible for enacting rules to uphold the legislative intent of the CCRs, but has never created any rules to set thresholds of significance. Therefore, there are not any identifiable quantitative, qualitative or performance levels to adequately determine what significant cumulative environmental impacts are occurring in the physical reality of California‘s forests and watersheds. Nonetheless, the legislative intent is clear, and this plan offers only RPF-produced concealments which do not adhere to the intent of California's lawmakers.

A. CDF practices demonstrate bias against environmentalists.

1. <u>CDF reviews do not provide the required cumulative impacts analysis</u>

We have reviewed all of the THPs for the Middle South Fork watershed for the past 20 years. We have found that the majority of the plans are copied and pasted repetitions of the same information, with no site-specific verifiable or factual evidence provided. CDF's Official Responses utilize the same repetitive copy and paste dismissal of anything that disagrees with the timber industry, while offering no factual evidence to support their approvals. No ongoing factual data is collected or presented to detect trends and changes over the past decade when a significant percentage of the forest cover in the watershed forestland has been logged. Credible science collects evidence over time to compare the changes which have occurred in order to determine what impacts there are. None of that has happened.

A glaring and blatant example of filling this THP with copy-and-paste boilerplate language is demonstrated in Section 4 "Cumulative Impacts Assessment".

Part VII is entitled "Cumulative Climate Change Impacts Assessment", which should contain a pertinent discussion about cumulative climate change impacts specific to this proposal. Instead, Part VII turns out to be the same copy-and-paste boilerplate language as every other THP that has been proposed in the MSFG watershed in the past 10 years.

We reviewed all of those THPs. In every case, the text in Part VII was identical to this THP. The only difference in this THP are two additional paragraphs pasted into the document (in a different font) regarding emissions targets for 2020 and 2030, paragraphs 3 and 4.

For 10 years, the same copy-and-paste text has been provided to CDF regarding a supposed "cumulative climate change impacts assessment". We can clearly see here that there has never been any assessment ever, provided by anyone, for these watersheds, yet CDF has approved each plan every time.

Part III, "Cumulative Biological Resource Impacts Assessment" is additional boilerplate, where the RPF simply pastes the identical information about native species into each THP, but nothing specific is every mentioned about the proposed project and no quantifiable data is every provided.

Furthermore, in Section 4 Part VIII, the RPF cites a "List of references consulted during this Cumulative Impacts Assessment". This same list of only 10 references is cited in every THP in this watershed going back 10 years! There is only one reference that is from the 21st century, and that is the "Field Guide to Butterflies of the San Francisco Bay and Sacramento Valley Regions", 2007. All other references are over 23 years old!

Out of the 10 references the RPF cites for this Section (again, this section is entitled "Cumulative Impacts Assessment"), only one reference actually pertains to assessing cumulative impacts! This single reference: "California Department of Forestry and Fire Protection Guidelines for Assessment of Cumulative Impacts; CDF; March 16, 1994." which was published by CDF, is dated 1994.

In short, the only reference the RPF consulted for assessing cumulative impacts on this project is nearly 30 years old. From this total lack of effort to actually assess real cumulative effects on this watershed using up-to-date information, one can only conclude that the entire cumulative impacts analysis in this THP is 30 years old as well.

State agencies, including CDF, are bound by ethics laws. One of the key concepts of those laws is that a public agency's decisions should be based solely on what best serves the public's interest. CDF's behind-the-scenes, biased review practice does not uphold the intent of the State's laws and rules, nor does it uphold the part of CDF's stated mission to protect California's natural resources. The Nobles plan at issue here suffers from the same ongoing deficiencies that past plans have had by not providing a robust and defensible cumulative impacts analysis.

2. The CDF Reviewer may be implicitly and unconsciously biased

“Unconscious bias (UB) arises from a feature of the human brain that helps us make decisions faster via a series of shortcuts. It shapes our perception of the world and our fellow human beings and can lead us to make questionable decisions. It means that we often end up treating people and situations based on unconscious generalizations and preconceptions rather than using a set of objective qualitative or quantitative parameters.”

[https://www.elsevier.com/open-science/science-and-society/unconscious-bias]

It is well established that unconscious bias exists in every workplace and at every level of human decision making, from hiring a new employee to reviewing a timber harvest plan. Good people can – and do – make biased decisions.

In our experience with the THP review process, we have found it is quite often the case that the Review Chair on the THP review team is a RPF themself and may already have a personal relationship, through past work or school experiences, with the RPF submitting the proposal. Often these RPF's are alumni of the same University Schools of Forestry, may be or have been members of the same Forestry Clubs, Logging Sports Teams, etc. . These kinds of close associations and kinship, as described, can provide a CDF Review team member with an immediate and undeniable implicit and unconscious bias.

The CDF Reviewer for this plan, Shawn Headley, was also the Second Review Chair for 1-20-00203-SON (267 acres, Approved), 1-18-082-SON (505 acres, Approved), both inside this same MSFG watershed. Both of those harvested areas, as well as a significant majority of the MSFG watershed, is owned by the same private landowner, Richardson Ranch LLC. Dan Falk is named owner of Richardson Ranch LLC. Falk was also the RPF, Landowner, and LTO on all of those plans. Falk is the LTO on this plan. Falk attended Humboldt State University School of Forestry a few years after Shawn Headley, CDF Review Chair. Both were on the Logging Sports Team and members of the Forestry Club at HSU. Elliot Brooks, who is the RPF on this plan, was also a classmate of Dan Falk and HSU alum. Elliot Brooks was also on the Logging Sports Team. Dan Falk has RPF License #2901. Elliot Brooks is RPF License #2910, and Shawn Headley (CDF) is #2970. This close association and kinship, being alumni from the same University, clubs, and sporting teams, provides Shawn Headley with an undeniable implicit and unconscious bias.

Any CDF reviewer who recognizes an unconscious bias should recuse themselves immediately from reviewing a THP for which the bias exists.

CDF must immediately take steps to tackle unconscious bias:

1. Introduce bias testing.
2. Introduce double blind peer review and/or other forms of peer review for THPs where appropriate.
3. Issue internal briefings to raise staff awareness of the subject and provide tools and resources to further spread awareness among reviewers and staff.
4. Draw attention to UB – and give advice on how it can be reduced – in guides for reviewers and staff.
5. Review and address the gender diversity of reviewers, staff, and applicants.
6. Produce analytics and studies on potential implicit and unconscious bias in the industry.
7. Review and address implicit and unconscious bias at organized conferences and events.
8. Strive for greater transparency and diversity with regards to reviews and reviewers.

IV. Information in the Logging Plan is Incorrect, Incomplete, and Misleading, and Therefore Insufficient to Evaluate Cumulative Impacts

A. Contrary to law, CDF has a pattern and practice of accepting and approving logging plans that lack factual, quantitative data or valid Cumulative Impacts analyses

We have heard state agency representatives who review THPs, such as the North Coast Regional Water Quality Control Board, as well as RPFs and CDF inspectors, state many times that they can tell the health of a local watershed ecosystem simply "by looking at it." This subjective and biased approach to cumulative effects analysis is entirely flawed and wrong. The cumulative impacts in these second growth mixed redwood and conifer forests is simply impossible to measure with a boots-on-the-ground, "I can tell what's going on" approach.

Cumulative impacts and effects are *measured cumulatively*, that is, measured over time. It is impossible to witness cumulative impacts in a single moment, or "by looking at it." Cumulative impacts are ascertained by first establishing measured baselines, then through continued and diligent monitoring of the environment. Thresholds and tolerances are established to decide "how much is too much". Timelines must cover a period long enough for effects to be accurately measured within statistical reason.

According to the CDF Official Response to THP 01-20-00203-SON, the CIA part of a THP may follow the wording found in the "Board of Forestry Technical Rule Addendum No. 2" which describes past projects:

> "For the purpose of this section past projects shall be limited to those projects submitted within ten years prior to submission of the THP."

As a result of this technical addendum, CDF has decided to only consider THPs that have been *submitted* in the past 10 years. So if, for purposes of an example, a plan was submitted 11 years ago but actually finished for example 6 years ago, it does not need to be considered in any cumulative impact today.

CDF consistently and extensively uses this "loophole" from Technical Rule Addendum 2 to minimize the effort required to perform a CIA in all THPs they review. This approach – only considering plans *submitted* in the past 10 years – not only undermines the very intention of a CIA, it also completely destroys the public's confidence that a proper and valid CIA could possibly have occurred, meanwhile obscuring and convoluting the public record with an inaccurate analysis.

For example, THP 1-08-103-SON, inside of this watershed, was submitted in 2008 but was not marked completed until May 2012. Nonetheless, CDF refused to consider this THP in the cumulative effects analysis for 01-20-00203-SON (filed in 2020), citing the loophole.

Is a 10 year time window sufficient to establish the accurate cumulative effects on a Northern California coastal watershed? How was this determined? Is a harvest area that was logged 10 years ago ready to be logged again? Of course not.

What about the plan submitted 12 years ago but took 4 years to finish. Does that really mean it is irrelevant to a CIA? Of course not.

Yet, that is exactly how CDF defines their responsibility in THP cumulative impacts analysis. This is not only a shameful disgrace and total negligence on the part of CDF, it is illegal under CEQA.

B. Nobles plan similarly lacks scientific, site-specific data regarding cumulative impacts; cumulative watershed impacts must include analysis of past logging effects; therefore, approval would be contrary to law

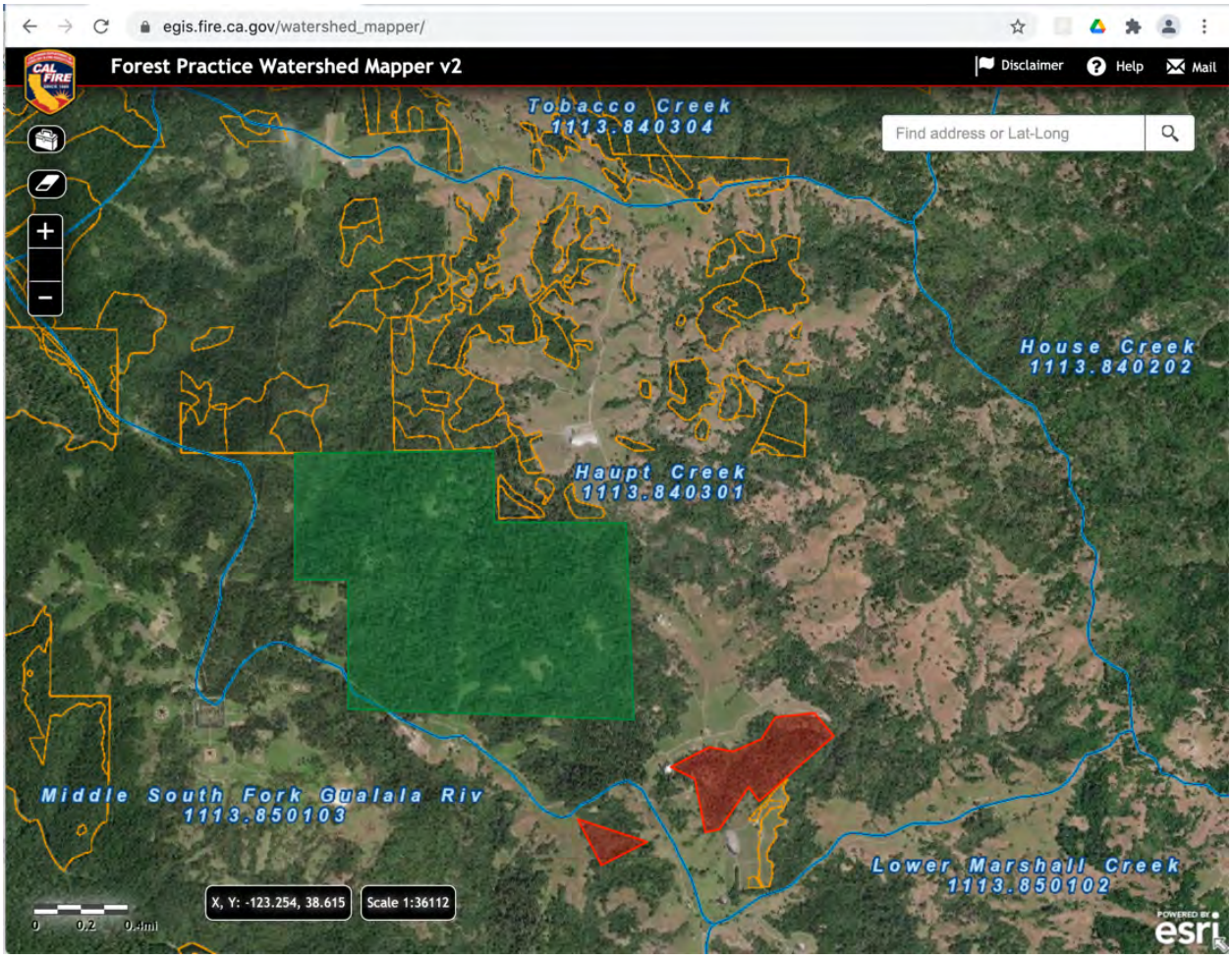
Even though CDF and other state and local agencies have failed to establish monitoring programs to measure effects over time from timber harvests, there are free tools readily available today for tracking cumulative effects. While cumulative effects are nearly impossible to ascertain in a single moment on the ground, they become very apparent when looking from above over time.

This THP includes the Haupt Creek planning watershed [calwater 1113.840301], a tributary of the South Fork Gualala River. The Haupt Creek watershed recently received a desperate "boost" when the Save the Redwoods League purchased the McAfin Ranch in a conservation effort to help the drying watershed.

The following screenshot from CDF's "Watershed Mapper" web portal provides a visual representation of the actual cumulative effects of timber harvesting in the Haupt Creek watershed. This single image of the Haupt Creek watershed clearly shows that over 60% of the watershed is already dried out, with the majority of remaining large trees (other than McAfin Ranch) already subjected to recent timber harvest plans.

Colored boundaries delineate important features on the map:

- Blue border is the watershed planning area boundary.
- Orange areas denote timber harvest plans.
- Green is the McAfin Ranch recently purchased by the Save the Redwoods League.
- Red are the proposed harvest areas.

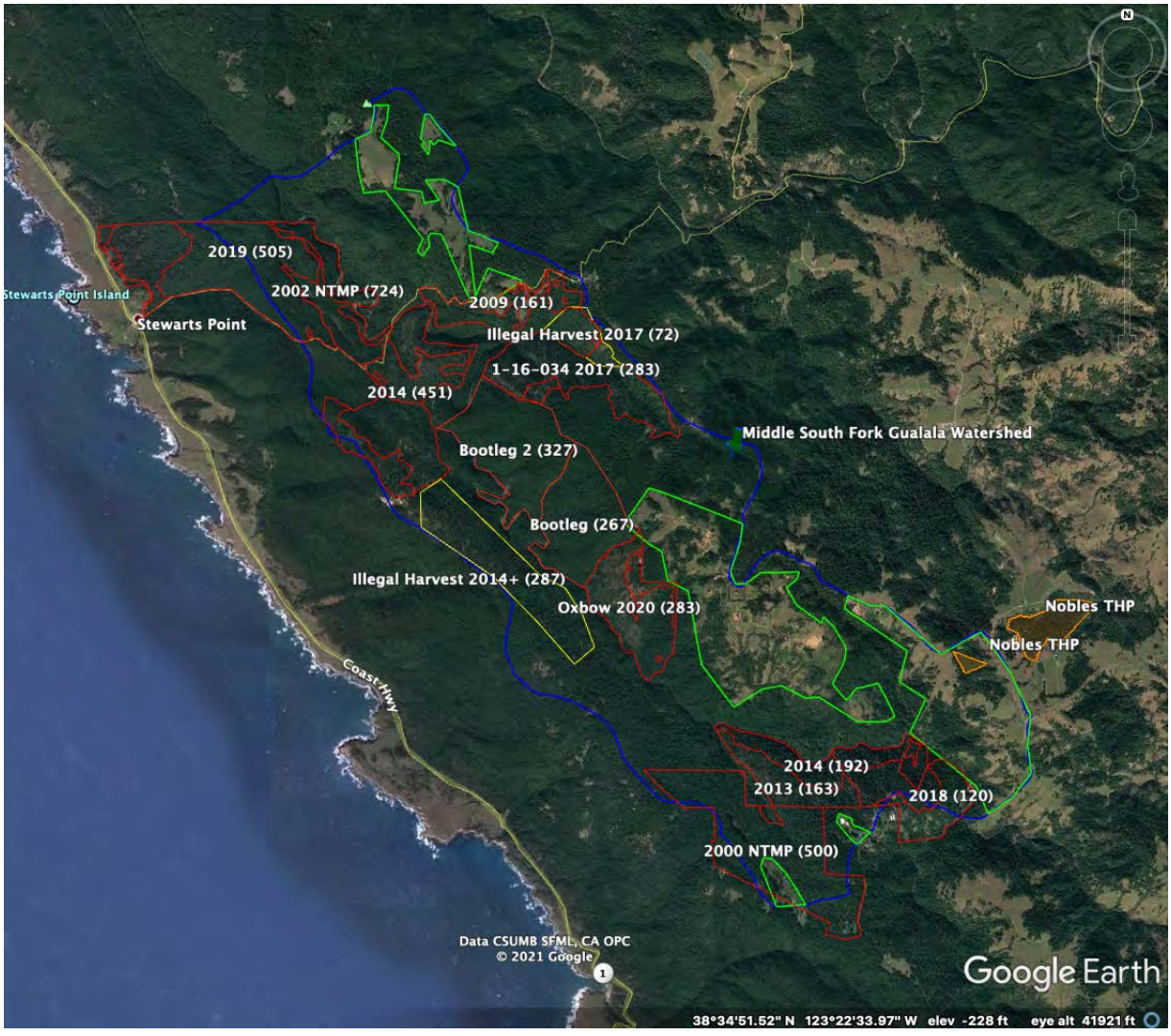


[https://egis.fire.ca.gov/watershed_mapper/]

The following aerial image shows the entire Middle-South Fork Gualala River watershed [calwater 1113.850103] on February 25, 2021.

Colored boundaries delineate important features on the map:

- Blue is the watershed boundary
- Green areas are non-forested open meadows and pastureland
- Red areas are THPs and active NTMPs harvested in the past 10 years
- Orange areas are the proposed Nobles THP
- Yellow areas are undocumented, illegal harvests that were presented to CDF on multiple occasions (see below)



In our recent public comment to 1-20-00203-SON regarding cumulative effects attached, we provided CDF thorough documentation of all timber harvests that have occurred in the MSFG planning watershed since 1986. This documentation included a breakdown of harvest acreage by year as well as undisputable historical satellite imagery showing harvest in the watershed over time.

In that same public comment, we also provided clear undeniable historical satellite imagery of undocumented, presumably illegal, out-of-bounds harvests that occurred in the MSFG watershed in the past 10 years.

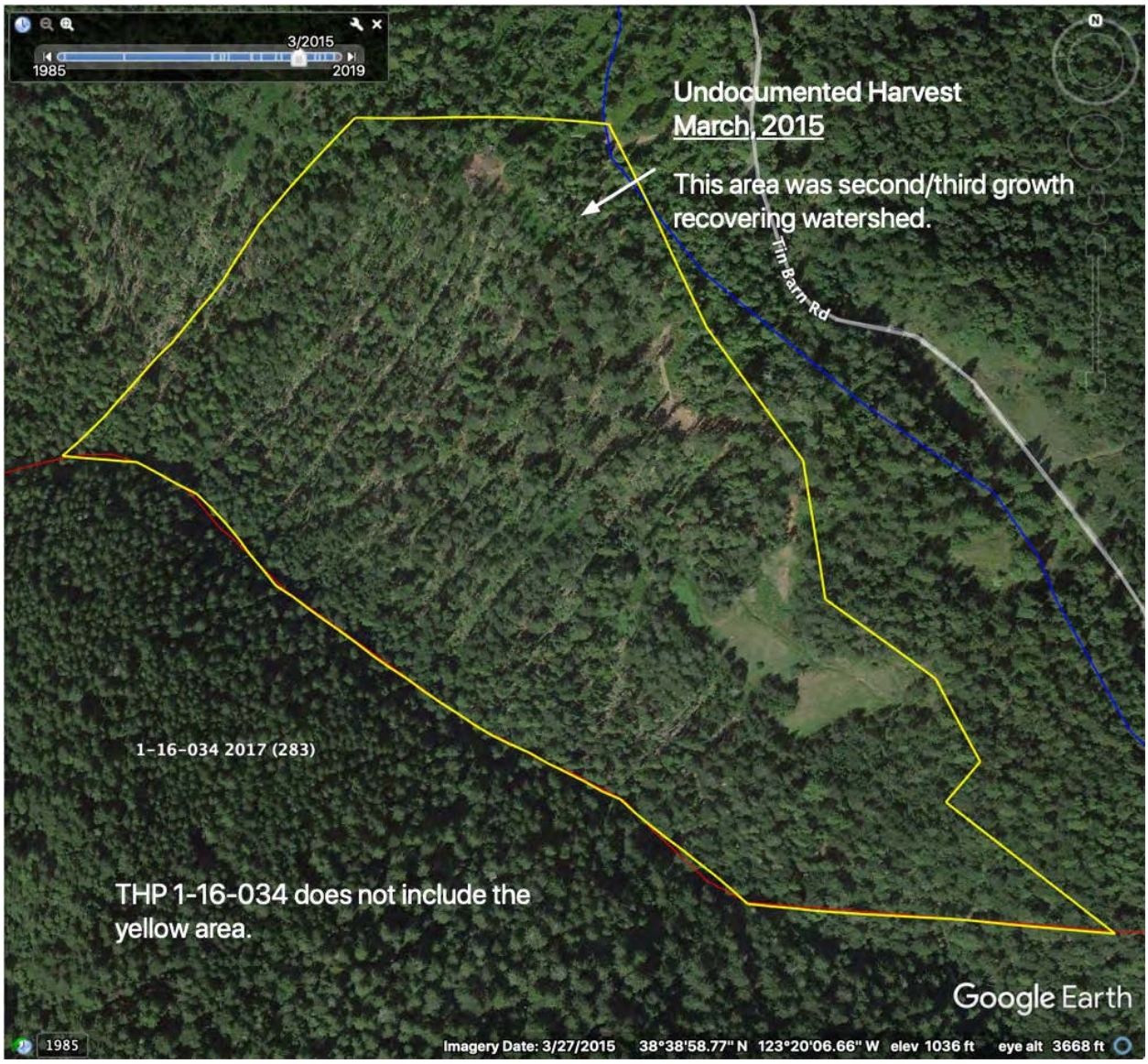
The first one, beginning in 2014, harvested 287 acres of Selected stands. One large stand in particular, on the opposite (west) side of the river from the Bootleg Stand, is clearly visible prior to the harvest and clearly wiped out afterwards. The destruction and scarring from this harvest is obvious from the air several years later.

[April, 2013 - before the harvest event]

[March, 2015 - after the harvest event]

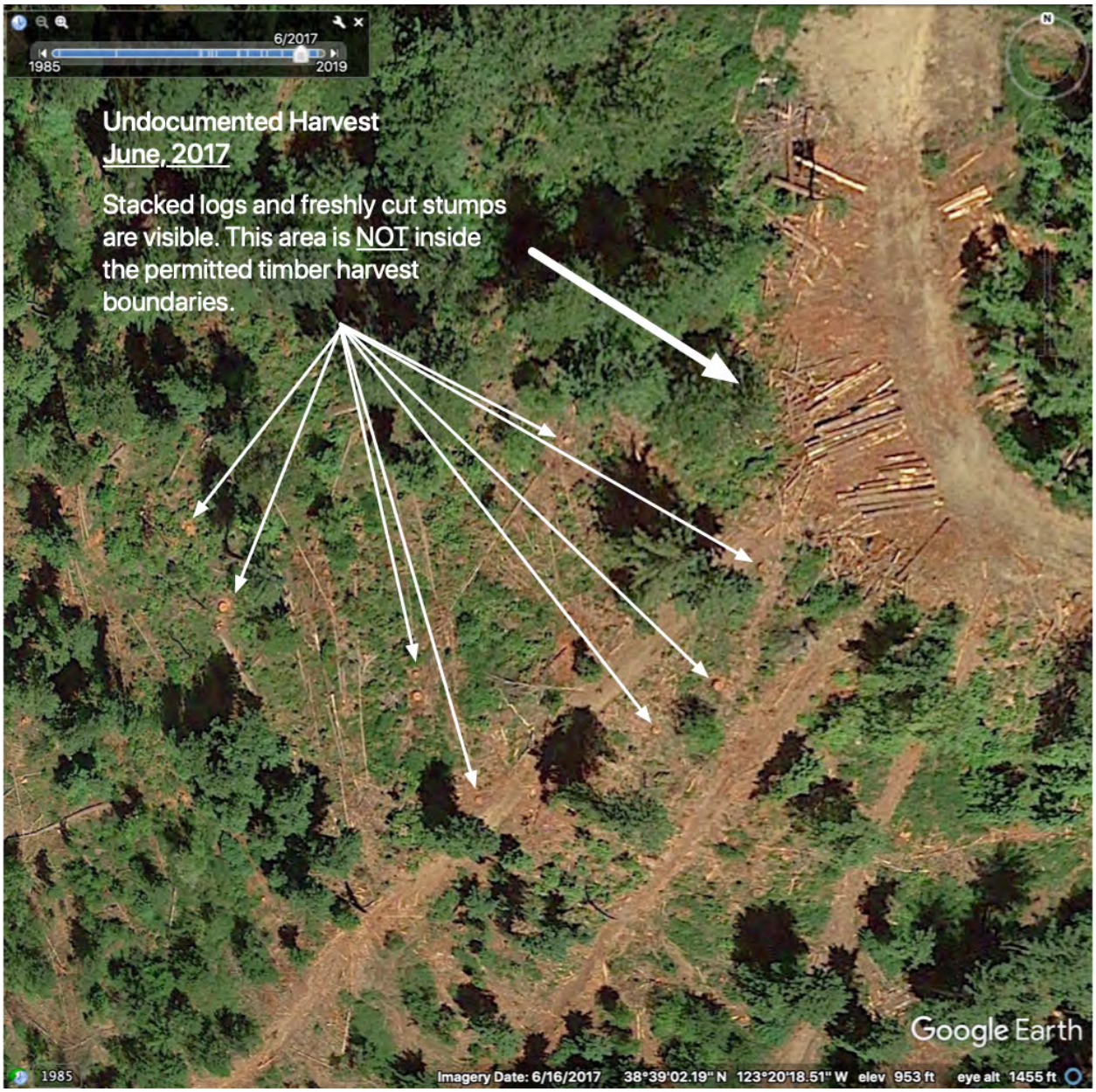
[June, 2017 - ~3 years after the event]

The second of these events, in 2017, effectively cleared 72 acres of forestland. This acreage was next to and adjoining the then active THP 1-16-034-SON. The satellite imagery clearly shows fresh roads and clearing, freshly cut stumps, and a large pile of stacked logs is visible on the east side of the area.



[March, 2015 - before the harvest event]

[June, 2017 - after the harvest event]



[June, 2017 - after the harvest event, zoomed in]

CDF has repeatedly responded that these harvests were permitted under the 10% Dead, Diseased, and Dying permit that the Landowner lawfully possesses. According to CDF's recent public comment response specific to this issue:

> "Under the California Forest Practice Rules, certain timber operations are exempt from filing a Timber Harvesting Plan. These include timber operations under 14 CCR 1038 (b) for the "Harvesting dead trees, Dying Trees, or Diseased Trees of any size, fuelwood or split products in amounts less than ten (10) percent of the average volume per acre, or the removal of Slash and Woody Debris that is not located within a WLPZ." These operations are considered low impact because they are only removing less than 10% of the average volume per acre. Timber operations must also must comply with all the FPR's including, but not limited to, wet weather operations, watercourse protection, avoidance of unstable areas, and avoidance of ground based operations on steep slopes. Because of this, 14 CCR 1038 (b) operations are normally not accounted for in the CIA."

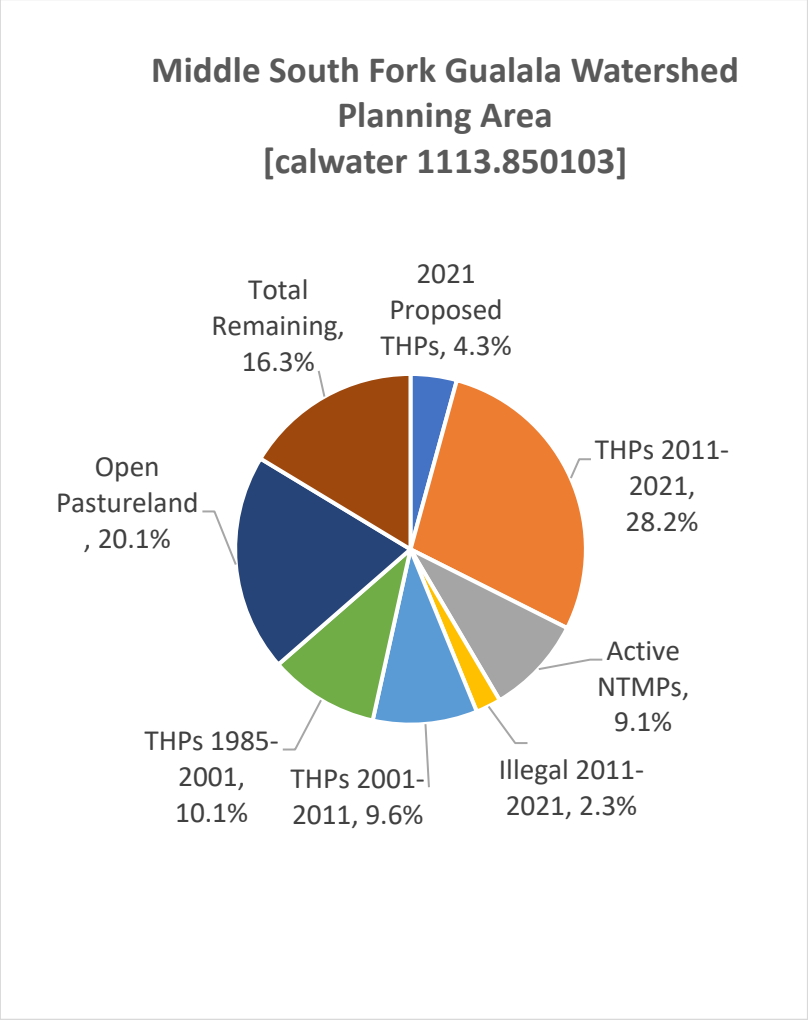
It is clear from this response that CDF has not even looked at the satellite imagery presented to them, or has turned a blind eye. The maximum ten (10) percent DDD exemption as stated applies to the average volume per acre.

If the aerial imagery presented above was actually 10% DDD harvesting, as CDF has claimed, we would expect to see the same sort of visible images of harvesting across the entire watershed over many years. Instead, only two specific events and locations stand out in the MSF in the past 10 years.

Clear-cutting 72 acres in 2017 does not qualify under a DDD exemption. Similarly, selectively harvesting 287 acres of healthy stands of old trees does not qualify under the DDD exemption. These actions were most likely illegal, are obvious from the historical record, and the harvest areas must be included in cumulative impacts analysis in the watershed.

The following summary captures the total cumulative acres harvested in the MSFG watershed in the recent past:

Cumulative Effects	% Total Watershed
2021 Proposed THPs	4.3%
THPs 2011-2021	28.2%
Active NTMPs	9.1%
Illegal 2011-2021	2.3%
THPs 2001-2011	9.6%
THPs 1985-2001	10.1%
Subtotal	**63.6%**
Open Pastureland	20.1%
Total Remaining	**16.3%**

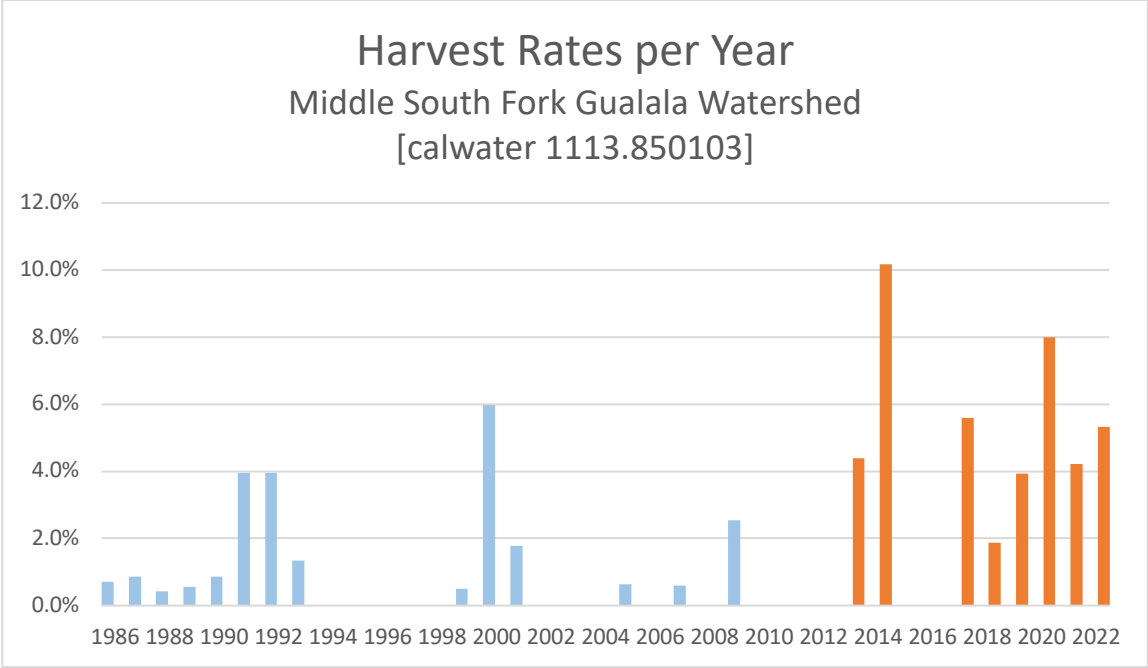


[35 Year Watershed Acre Harvesting Breakdown]

Harvest rates in the watershed per year are calculated in the following table:

	THP Acres	Watershed Forestlands	Cumulative Acres	% Watershed	% of Remaining Forestland
1986	45	6227	45	0.7%	0.7%
1987	54	6164	99	0.9%	1.6%
1988	27	6164	126	0.4%	2.0%
1989	35	6121	161	0.6%	2.5%
1990	55	6046	216	0.9%	3.4%
1991	250	5601	466	4.0%	7.4%

1992	250	5351	716	4.0%	11.3%
1993	85	5431	801	1.3%	12.7%
1994	0			0.0%	0.0%
1995	0			0.0%	0.0%
1996	0			0.0%	0.0%
1997	0			0.0%	0.0%
1998	0			0.0%	0.0%
1999	32	5452	833	0.5%	13.2%
2000	378	4728	1211	6.0%	19.2%
2001	113	4880	1324	1.8%	21.0%
2002	0			0.0%	0.0%
2003	0			0.0%	0.0%
2004	0			0.0%	0.0%
2005	40	4913	1364	0.6%	21.6%
2006	0			0.0%	0.0%
2007	38	4877	1402	0.6%	22.2%
2008	0			0.0%	0.0%
2009	161	4593	1563	2.5%	24.7%
2010	0			0.0%	0.0%
2011	0			0.0%	0.0%
2012	0			0.0%	0.0%
2013	277	4200	1840	4.4%	29.1%
2014	643	3191	2483	10.2%	39.3%
2015	0			0.0%	0.0%
2016	0			0.0%	0.0%
2017	353	3128	2836	5.6%	44.9%
2018	118	3245	2954	1.9%	46.8%
2019	248	2867	3202	3.9%	50.7%
2020	505	2105	3707	8.0%	58.7%
2021	267	2076	3974	4.2%	62.9%
2022	337	1669	4311	5.3%	68.2%



The data clearly shows a generally moderate rate of harvest from 1985 to 2011. More importantly, large gaps in time on the order of 4-5 years occurred multiple times in the past, allowing the watershed a chance to recover. During the period from 1985-2011, the watershed averaged 60 acres of timber harvested per year, or 1.0% of the forested timberland. Since 2012, however, harvest rates have averaged over 270 acres per year, with over 500 acres harvested in a single year on multiple occasions! Over the past 8 years, 2,411 acres (over 38%) of the watershed planning area has been subjected to timber harvesting, with non-stop harvesting occurring somewhere in the watershed at all times!

That is an average rate of nearly 5% of the forested watershed harvested every year! This THP only exacerbates the over-harvesting problem the MSFG is facing. This rate of harvesting is completely unsustainable, irreversible, and may permanently destroy the watershed!

For decades, professional hydrologists have made observations such as: "Examination of recently approved THPs and SYPs indicates that plans are being approved that do not contain technically valid cumulative impact assessments." (Reid 1999, see also Dunne et al. 2001)

CDF has a historical pattern and practice of accepting the same type of factually-void logging plans throughout the entire greater Gualala watershed, never providing the public or other decision makers with the information necessary to knowledgably assess the cumulative environmental impacts of each logging plan. While decisions concerning whether or not to ultimately approve a plan are matters left to the judgment of CDF, CDF does not have discretion to take short cuts through the environmental review process, compromise its core obligations under CEQA, and approve a plan with significant impacts that have not been fully analyzed.

Although the Forest Practice Rules contain a number of generic best management practices (BMPs) or mitigation measures to reduce the environmental impacts of logging, experts have

understood for decades that the measures are not sufficient to prevent cumulative watershed effects (CWEs) from occurring. CEQA does not permit mitigation measures to be used to avoid assessing whether a project‘s cumulative impacts will be significant (San Joaquin Raptor Rescue Center v. County of Merced (2007) 149 Cal.App.4th 645, 663). Merely the inclusion of mitigation measures in the plan description does not make any potential impacts automatically less than significant (Lotus v. Dept. of Transp. (2014) 223 Cal.App.4th 645, 656).

"Formulation of mitigation measures shall not be deferred until some future time," and the identification of the specific details of mitigation measures cannot be postponed unless CDF (1) commits itself to mitigation (2) adopts specific performance standards that the mitigation will achieve and (3) identifies the potential actions that could feasibly achieve the identified performance standard. CEQA Guidelines section 15126.4(a)(1)(B). Here, contrary to CEQA, CDF does not identify any such specific performance standards, nor does it identify how to feasibly attain those nonexistent standards.

In a report titled, “A Scientific Basis for the Prediction of Cumulative Watershed Effects” (Dunne et al. 2001, "CWE Report") a blue ribbon panel of experts on the University of California Committee on Cumulative Watershed Effects comprehensively reviewed the Forest Practice Rules, dozens of logging plans, and ongoing water quality impacts. The CWE Report explains the inadequacy of CDF‘s application of the Rules to avoid cumulative watershed effects. The CWE Report pointed to three reasons why CWEs are occurring, despite CDF‘s application of the Forest Practice Rules.

The first problem is that CDF does not require that plans contain sufficient data to allow the agency and the public to assess existing and expected impacts. (“Information provided in individual THPs that we examined was often incomplete or too subjective to assess current resource conditions, lingering cumulative effects, or the potential for additional impacts.”)

The second problem, the CWE Report explains, is that CDF operates under the premise that, even if a logging plan may have adverse impacts, “it can be mitigated out of existence by application of a Best Management Practice” found in the Forest Practice Rules.

The third problem is that CDF never looks at the watershed as a whole in assessing cumulative impacts. Having reviewed dozens of logging plans, the CWE Report records the damage caused to watersheds when CDF allows the “postage stamp” approach, looking only at a small fraction of the watershed in which the logging plan is located. This “postage-stamp”, or "parcel-by-parcel", approach, in which only the immediate project area of a single, small timber harvest is ever reviewed ... does not capture the cumulative influence of multiple harvests over a long period of time in a larger watershed.

Ultimately, the CWE Report concluded that a process – indistinguishable from the review relied on in all of the Gualala River watershed logging plans – “contains no method for recognizing damage across entire ecosystems or watersheds” and “needs to be replaced with a true, watershed-scale assessment.” While the CWE Report was written nearly 20 years ago, each of these problems remains, and can be seen once again in the Nobles plan at issue here.

The public is still waiting for enough concrete information and specific data to enable them to understand the project's cumulative impacts, CDF is still acting under the unsupported and unsupportable assumption that mitigation measures render a cumulative impact analysis superfluous, and CDF continues to studiously avoid looking at the impacts of timber harvesting on the watershed as a whole.

C. Nobles Plan will Affect Downstream Areas

1. Limiting the Assessment Area in the Nobles Plan is an Attempt to Avoid the Required Cumulative Impact Analysis of the Downstream Watershed.

Although the Rules permit "planning watersheds" to be used as a starting point for cumulative watershed assessments, CDF is required to look beyond the planning watershed to ensure all relevant information is considered (such as the greater watershed and fluvial system). 14 CCR § 898; see also East Bay Mun. Utility Dist. v. Cal Dept. of Forestry & Fire Prot. (1996) 43 Cal.App.4th 1113, 1133 ("duty to require supplementations is entirely consistent with the agency's duty under CEQA to use its best efforts to find out and disclose all that is reasonably can").

The small geographic scope used by the RPF in this logging plan is exactly the type of inadequate analysis that the cumulative impact assessment is intended to prevent (EPIC v. Cal Dept. of Forestry & Fire Prot. (2008) 44 Cal.4th 459, 525). CEQA requires the scale of the cumulative impact assessment area to be based on the nature of the impacted resource, not the scale of the project (Kings County Farm Bureau v. City of Hanford (1990) 221 Cal.App.3d 692, 722-723).

The South Fork Gualala River is a Class I watercourse listed on the Clean Water Act 303(d) list for impairments associated with excessive sediment and high temperatures. The North Coast Regional Water Quality Control Board (NCRWQCB) is tasked with sustaining and improving the water quality of the river.

The NCRWQCB has recognized the need for their agency to improve monitoring, assessment, and increase educational outreach. At the present time, however, there is no public-facing water quality monitoring plan for the greater Gualala River or South Fork watersheds.

While the NCRWQCB is required to either sustain or improve the water quality of this Class I watercourse, they have simultaneously failed to establish any baselines or thresholds of significance for any measurable water quality indicators whatsoever. All of the following are indicators that should have baselines established and a monitoring plan in place: Conductivity, Temperature, O2 Saturation, Air Saturation, Backscatter at 470nm, 532nm, and 650nm, ChlorophylA, CDOM, Turbidity, Phycocyanin, and Velocity in 3-dimensions. These measurements should be taken both upstream, downstream, and inside the proposed harvest area watersheds, as well as other strategic sites along the river. Ideally, monitoring would take place throughout the year, certainly during peak flows.

According to James Burke, the NWRWQCB agency reviewer for most THPs in the North Coast district:

> "As for thresholds, there are no hard numeric thresholds. The CEQA threshold is 'significant' impacts and from Basin Plan, there are numeric or narrative objectives as well as the prohibition against discharge, or threatened discharge, in amounts deleterious. I've attached a CEQA document I wrote that has some discussion on thresholds. Look at pages 10 to 13 if you're interested. I've wrestled with the issue of harvest rates for my whole career as have other workers."

Once again, we hear the same unwillingness to state any identifiable quantitative, measured performance levels to adequately determine what significant cumulative environmental impacts are occurring in the physical reality of the watershed!

We reviewed the CEQA document Mr. Burke authored (attached), which refers to the North and South Fork Eel River, and studied the discussion on harvest rates from pages 10 to 13 he referred to. On page 10 we find: "Watershed-wide average annual harvest rates required under the Order equate to less than 1.5% equivalent clearcut acres. These rates are lower than required under the 2006 WWDRs, which allowed annual harvest rates of 1.9% in the North Fork and 1.8% and upwards in the South Fork... In addition, the Order requires that the rate of harvest in any subwatershed not exceed 2% equivalent clearcut acres per year averaged over any 10 year period. This is to ensure that proposed harvest rates are generally below a threshold that would cause concern for contributing to ongoing cumulative impacts on water quality and contribute towards control of sediment and improvement of impaired beneficial uses of water."

[Note: Equivalent clearcut area (ECA) is a widely used methodology developed by the United States Forest Service (USFS) to account for the relative impacts of different types of silvicultural treatment. It assigns a weighting factor of one to clearcutting and a value less than one for partial harvesting silvicultural treatments. The weighting factor for a silvicultural treatment is multiplied by total area treated under each silviculture to arrive at a normalized disturbance calculation. Therefore, 100 acres of Selection harvest, which is typically assigned a ECA factor of 0.5, would be counted as 50 equivalent clearcut acres.]

According to the Elk River study above, it is possible to formulaically calculate cumulative effects and harvest rates, contrary to Mr. Burke's statement. The study indicates that a reasonable rate of harvest for sustainability in these watersheds is less than 1.5% ECA, or 3% Selective silviculture.

Additionally, research has shown that coastal redwoods grow faster in wetter areas and slower in dryer areas. This watershed has seen drought conditions for the past 5 years. It is not reasonable to assume that the trees have been growing here at their maximal rate during this time.

The Nobles THP, which includes Group Selection silviculture (smaller clearcuts), increases the 5-year average in this watershed to 4.8% of timberland harvested per year, well beyond the maximum rate of sustainability!

2. Arbitrary Use of calwater 2.2a as Area Subjected to Cumulative Impacts Analysis

For unknown reasons, CDF uses the calwater 2.2 planning watershed as its basis for the entire area subject to any cumulative effect. The calwater system was first developed in 1996.

According to this USGS link online,

> "This digital data set was created to provide a context for developing a statewide, comprehensive ground-water monitoring and assessment program as per the requirements of the California State Assembly bill AB599. The development of this data set facilitated analysis and identification of the priority basins and areas outside basins.
>
> This data set was developed from previously developed digital data sets of ground-water basins (California Department of Water Resources, 2002) and watersheds (California Department of Forestry and Fire Protection, 1999)."
> [https://water.usgs.gov/GIS/metadata/usgswrd/XML/ca_provinces.xml]

AB599 was filed in 2001.

> "AB 599, Liu. Groundwater contamination: quality monitoring program.
>
> Existing law declares that groundwater is a valuable natural resource in the state and should be managed to ensure its safe production and its quality. Existing law authorizes specified local agencies to adopt and implement groundwater management plans.
>
> This bill would require the State Water Resources Control Board to integrate existing monitoring programs and design new program elements, as necessary, for the purpose of establishing a comprehensive monitoring program capable of assessing each groundwater basin in the state through direct and other statistically reliable sampling approaches, and to create an interagency task force to identify actions necessary to establish the monitoring program and to identify measures that would increase coordination among state and federal agencies that collect groundwater contamination information. The bill would require the state board to convene a described advisory committee to the task force. The bill would require the state board, in consultation with other specified agencies, to submit to the Governor and the Legislature, on or before March 1, 2003, a report that includes a description of a comprehensive groundwater quality monitoring program for the state."
> [http://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=200120020AB599&search_keywords=groundwater]

CDF has chosen to confine their assessments to the small planning watersheds for many years and has approved thousands of plans in California using this faulty assessment system. In past plans and approvals within the greater Gualala watershed, neither the NCRWQCB nor CDF have ever provided adequate justification, supported by substantial evidence, as to why they refuse to look for water quality impacts downstream of the individual plans beyond the planning

watershed boundaries. As a result, both the past logging plans and this current one fail to inform the public and decision makers of the true environmental consequences which are occurring.

The practice of the misuse of the planning watershed delineations has prevented any meaningful cumulative impact analyses and allowed many of California's important watersheds to be over-cut. There is no excuse for this and it must stop. CDF's approvals are not upholding the laws nor the intent of the laws, and are not preventing or repairing the well-known significant adverse effects that are detailed in public comments and throughout many scientific studies.

While NCRWQCB inspector Burke states above he has been struggling with harvest rates for his entire career, others have not. Establishing a formulaic methodology to determining sustainable rates of harvest in these Northern Californian coastal forests is not a "rocket science".

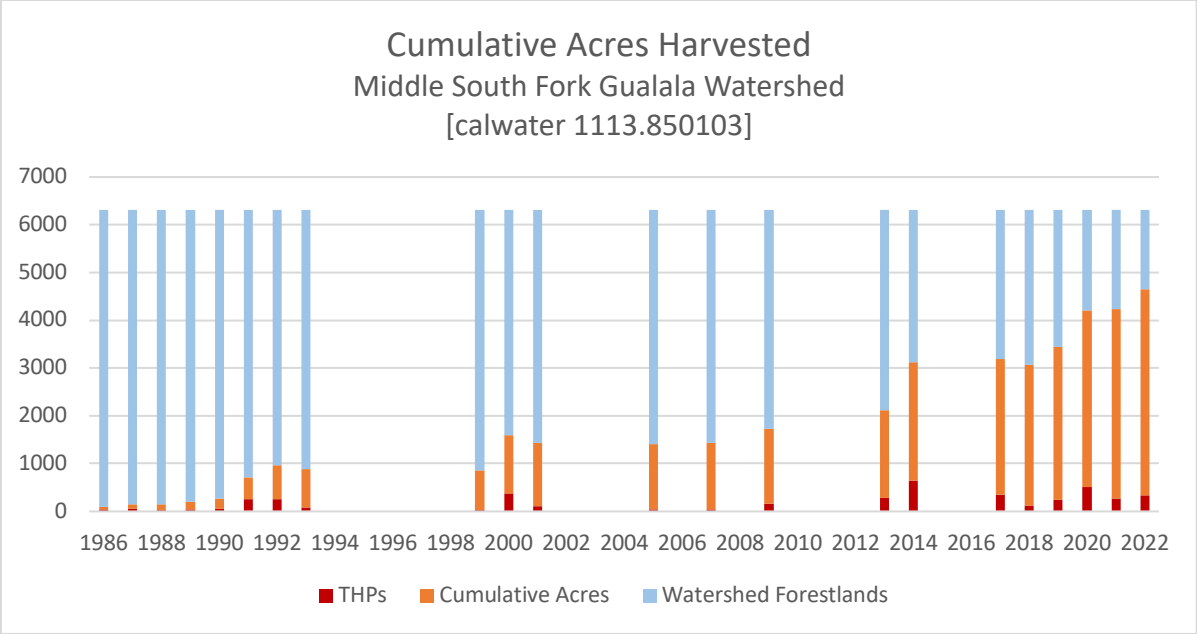
For example, Hans Burkhardt provides a rational, thorough, and thoughtful, scientific-based approach to answering this question of cumulative assessment in his publication "Maximizing Forest Productivity".

> "A healthy forest economy must be sustainable, that is, able to be carried on in perpetuity; any forest economy which is not sustainable cannot last, and is, therefore, not healthy.
>
> The way to achieve sustainability and a healthy economy is to live in balance with a region's ecology.
>
> If harvests exceed forest growth, inventory and productivity gradually decline to the point where both the economic and ecological system simultaneously collapse. If, on the other hand, harvest rates are below the rate of forest growth, inventory and productivity will steadily increase until the forest's full productive capacity is reached."

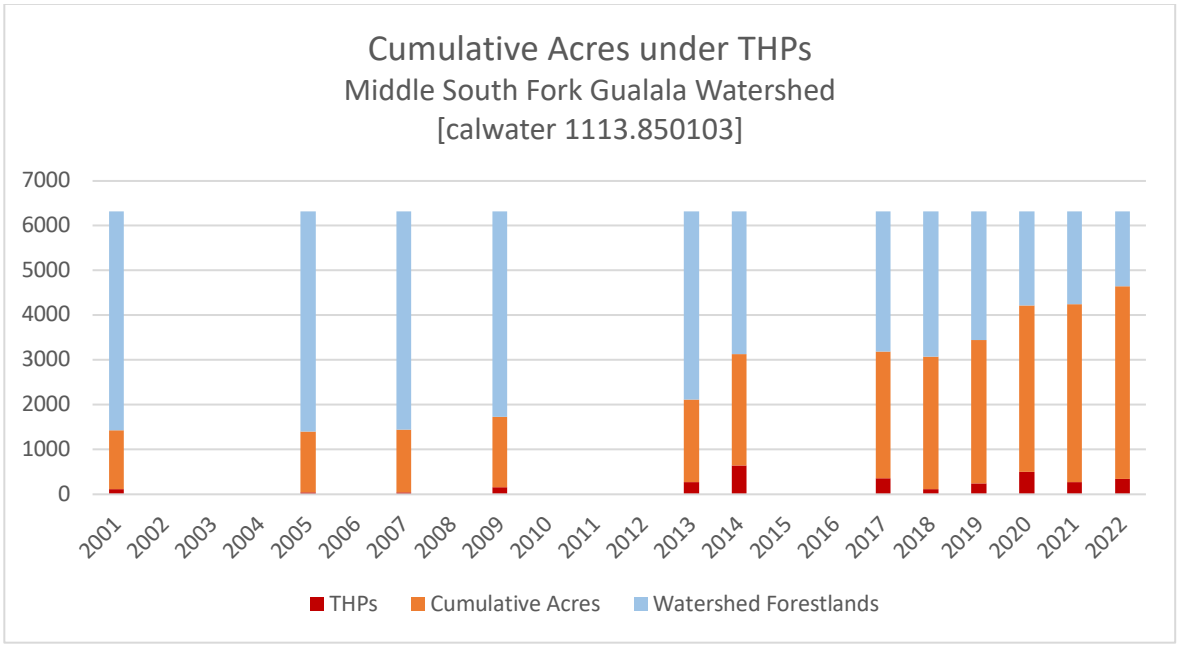
Mr. Burkhardt goes on to show that the optimal sustainable rates of harvest for this type of mixed redwood/conifer forest is between 1-2% yield of forestland per year; that is the regrowth here, depending on conditions. (Burkhardt, H. J. 1994. Maximizing Forest Productivity, pgs 3-7). This is consistent with the Elk River Order cited above.

The Middle South Fork Gualala planning watershed has a total forestland area of 6,000 acres. Therefore, using Mr. Burkhardt's analysis, or the Eel River Order provided by Mr. Burke from the NCRWQCB, harvesting 50-100 acres per year would be the maximum sustainable harvest rate for this planning watershed.

The MSFG has unfortunately seen nothing like these maximum thresholds. The watershed has been subjected to harvest rates averaging over 5% per year just in the past 10 years!



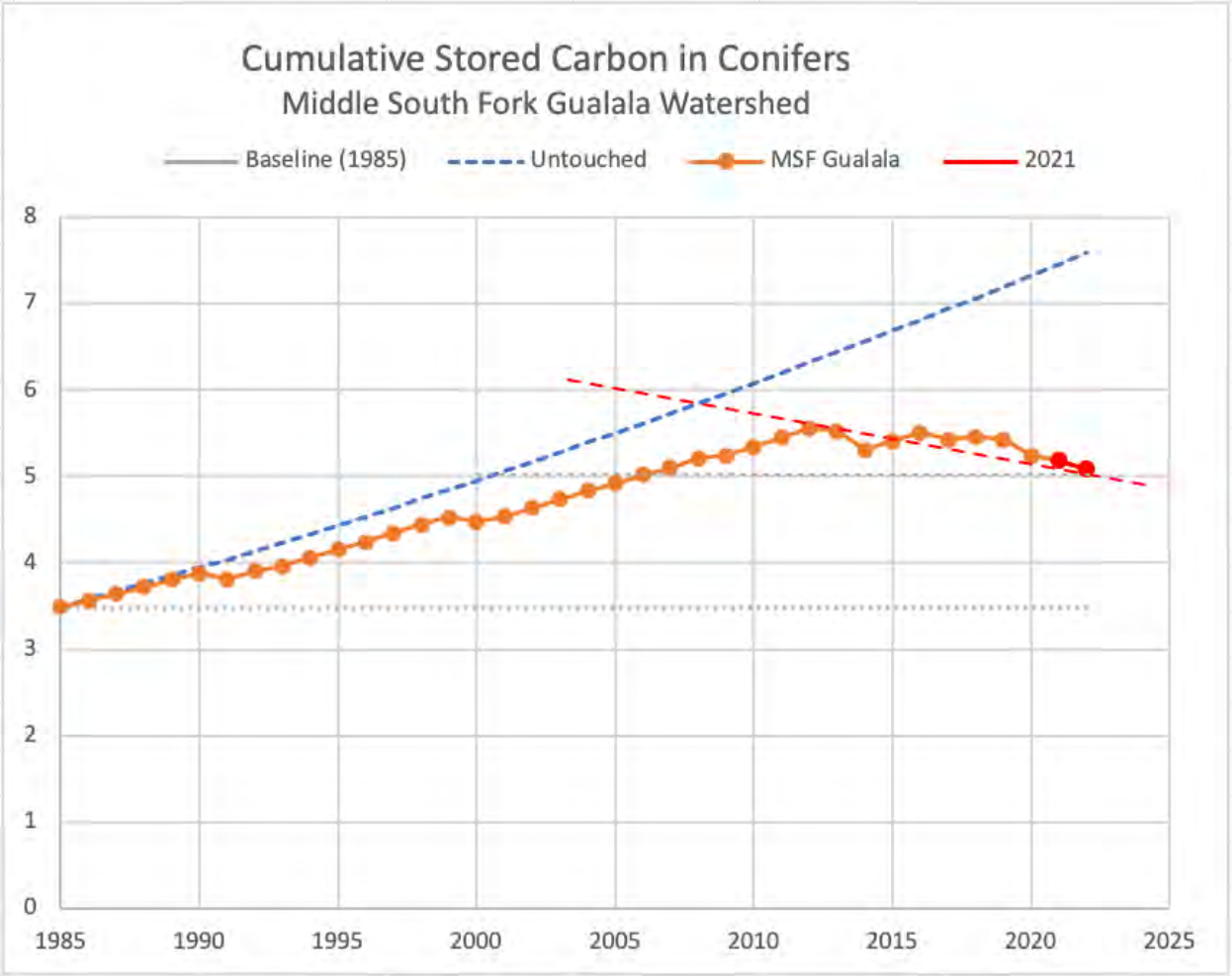
[35 Year Cumulative Acres Harvested in the MSFG watershed]



[10 Year Cumulative Acres Harvested in MSFG watershed]

Sadly – and primarily due to CDF's lack of oversight and gross inability to calculate cumulative impacts – the MSFG watershed has experienced on average over 300 acres of timber harvested per year for the past 8 years. In just 8 years, the watershed's recovery and total sequestered carbon in biomass has been set back over 40 years of recovery! This is a gross injustice served to conservation when the entire purpose of a cumulative impacts analysis is to guarantee that our natural watershed ecosystems are not negatively impacted by a THP and can foster and rebound.

We modelled the second growth MSFG watershed using a watershed modelling software application. The following graph represents the estimated accumulation of stored carbon in the watershed over the past 35 years (in million-metric tonnes). In this graph we can clearly see that rates of harvesting until 2012 were in-line with sustainable and restorative practices, and the watershed was accumulating carbon each year. After 2012 however, the cumulative impacts of the current rates of harvesting become very apparent. The watershed has turned the corner for the worst, and this THP will only increase the rate of demise.



This practice of over-harvesting year after year after year – proven here using quantitative analysis and published thresholds – is entirely unsustainable and has already led to irreparable and irreversible harm in this watershed. As Mr. Burkhardt warns us, a decline will inevitably lead very quickly "*to the point where both the economic and ecological system simultaneously collapse*".

3. Harmful Algae Bloom in Gualala River; Algal Mats Developing in Wheatfield Fork; Haupt Creek Feeds Wheatfield Fork; Increased Water Temperatures in Gualala River

In previous public comments we alerted CDF and the NCRWQCB THP reviewers to a recent harmful algae bloom in the Gualala River in October of 2020 which they were previously

unaware. We explained the many possible links between the continuous upstream logging and this first-ever recorded HAB. HABs thrive on increased temperatures and more nutrients in the water, both by-products of timber harvesting.

In this case, a swimmer developed a skin rash after touching algae in the river. The NCRWQCB determined that a HAB had occurred, "warning" signs were posted and the estuary was closed to the public.

The following observations were made by a resident expert botanist, who witnessed the algal mats on December 19, 2020:

> "I have more information on the current floating green vegetation mats in the lagoon, following the late summer/fall filamentous green algal (*Cladophora* & associated genera) bloom. It's related to an unusual condition that emerged this year upstream on the Wheatfield Fork.
>
> I visited the closed, full lagoon Saturday to see if there were traces of the late fall bloom of green filamentous floating algal mats, often attached to the underlying floating fronds of native submerged estuarine aquatic vegetation, like spiral wigeongrass *(Ruppia cirrhosa*, a "seagrass", not a grass) and sago pondweed (*Stuckenia pectinata*). Visitors to the Gualala and Navarro River, which seasonally close off lagoons, often perceive these at a distance as nuisance algae or harmful algal blooms.
>
> There were no green algal mats yesterday, which is expected, since they usually decay and sink to the bottom late fall, when the seagrasses/pondweeds die back to buds. But there were **lots of large olive-green floating mats of a native tiny water-fern, *Azolla filiculoides***. Atttached are photos to help recognition and identification, to distinguish them from algae.
>
> This is the <u>first time</u> *Azolla* mats have accumulated in the lagoon. They are floating as free mats, and trapped among floating kelp near the mouth. They also look like algal mats from a distance. They are normally very infrequent in the river, but this year upstream on the Wheatfield Fork, disconnected, some still pools were completely covered with them, <u>for the first time I've observed in 20 years</u>. They are now flushing out of the reconnected channel pools, and accumulating downstream. <u>For pools that are refuges for juvenile steelhead, massive *Azolla* mats, blanketing like pool covers, may be a problem for drift-feeding and predation on insects falling on the water surface.</u>"

While *Azolla* itself is not a toxic algal bloom, which are single-celled bacteria, this first-time event is clear evidence that something is dangerously wrong in the Gualala River, and it's manifesting in the Wheatfield Fork. As a tributary to the Wheatfield Fork, Haupt Creek and its watershed play a vital role in keeping the water clean and temperatures lower, minimizing the ability of these and other more toxic algae to bloom. Similarly, the Middle South Fork Gualala, which combines with the Wheatfield Fork into the Main Stem Gualala just a few miles upstream of this harvest plan, is an equally vital part of this water cooling system.

As stated in Part 1 above, the Gualala River is listed on the Clean Water Act 303(d) list for impairments associated with excessive sediment and high temperatures, and the NCRWQCB is tasked with sustaining and improving the water quality of the river. The only possible way to do this is with a quantitative, scientific, measured and validated approach to water quality monitoring.

Before approving this THP, CEQA law requires that thresholds for tolerance for cumulative impacts are first established. Many indicators, such as all of the scientifically-backed indicators listed in this document, must be measured. Baselines must first be established. A lack of resources is not an excuse of lack of required oversight. CEQA is clear in this regard: not performing the required CIA is simply against the law.

4. Plan Fails to Provide Information Required by the California Wild and Scenic Rivers Act

California's Legislature passed the Wild and Scenic Rivers Act in 1972, following the passage of the federal Wild and Scenic Rivers Act by Congress in 1968. Under California law, "Certain rivers which possess extraordinary scenic, recreational, fishery, or wildlife values shall be preserved in their free-flowing state, together with their immediate environments, for the benefit and enjoyment of the people of the state."

The Gualala River is on the list of California rivers receiving state and federal protection under the Wild and Scenic Rivers Act.

Designated wild and scenic rivers are often managed by multiple agencies and in some cases tribal governments. An example of general steps required by these agencies when analyzing a proposed project, and a list of the laws governing these rivers, is laid out clearly in California DOT's Standard Environmental Reference (SER), Volume 1 "Guidance for Compliance", Chapter 19 "Wild and Scenic Rivers":

> "1. Interagency Coordination
>
> Consult with the designated river managing agencies as identified in the list of Wild and Scenic Rivers Decision Tree. It may be necessary to also consult with the National Park Service (NPS) Regional Office in San Francisco.
>
> The purpose of this consultation is to determine whether the proposed project could have an adverse effect on the free-flowing characteristics of the river and whether the action could have the potential to alter the river segment's ability to meet the criteria that classify it as wild, scenic, or recreational The results of this consultation must be included in the environmental documentation. If the consultation results in the determination that there would be an adverse effect, subsequent coordination would be required to develop appropriate mitigation measures.
>
> 2. Early Coordination Meeting
> - Will the proposed project have an adverse effect on the free-flowing characteristics of the river?

- Does the action have the *potential* to alter the river segment's ability to meet the criteria used to classify it as wild, scenic, or recreational?
- Can impacts be avoided by using an alternative design?
- Is mitigation possible and feasible?

3. Report Content

The environmental document shall discuss the issue, all coordination among agencies, any impacts to the qualities that support the river's designation, and any mitigation measures."

[https://dot.ca.gov/programs/environmental-analysis/standard-environmental-reference-ser/volume-1-guidance-for-compliance/ch-19-wild-scenic-rivers].

As far as we can tell, this THP does not mention the Wild and Scenic Rivers Act, nor the fact that the Gualala River is protected under this act. There is no mention of any interagency coordination meeting specific to this act, and no environmental document was produced or provided that discusses the issue.

Clearly, this THP has the potential to alter both the Middle South Fork and Haupt Creek/Wheatfield Fork's river segments. As described above, never-before-seen algal mats have been recently witnessed forming in the Wheatfield Fork, a popular swimming and recreational area where Haupt Creek meets the Gualala River. Additional timber harvesting will only exacerbate and perpetuate this problem.

Therefore, this THP, and the lack of review and factual cumulative analysis therein, violates California's Wild and Scenic Rivers Act.

5. Plan Fails to Assess Cumulative Effects on the Water Cycle

The very foundation of a watershed's ecosystem health is the water cycle, yet there is no discussion in the plan of the cumulative effects that the vast changes to the landscape are producing.

Removing forest cover opens the land to more solar radiation, producing land degradation effects by drying out the soil more quickly, and increasing groundwater temperatures. Removal of larger trees significantly reduces evapotranspiration and greatly affects the local microclimate. Logging leaves combustible slash about while drying out the cutover and surrounding areas.

The fact is this plan will continue to contribute to climate change, produce land degradation, and impact the water cycle by:

- **Increasing soil and air temperature**
  impacts: less rain and humidity→ increased fire danger → fire leads to more loss of forest cover → dryer landscape
- **Increasing erosion**
  impacts: soil loss → water pollution from point- and non-point sources → degradation of aquatic habitat → population loss in aquatic species
- **Causing loss of soil fertility from loss of nutrients and organic matter**

impacts: less vegetation growth → less evapotranspiration → less atmospheric moisture transport → higher, drier air and soil temperatures → more vegetation death and increased fire probability

As far as we are aware, there has been no attempt at the local, regional, or state level to prevent or constrain these effects, or to collect factual evidence to determine what effects are occurring. There is no general or site-specific evidence provided in this plan regarding water cycle and climate change cumulative effects from logging, nor has there been in the multitude of past plans CDF has approved.

Lukovic et al. (2021) observes: "Californian hydroclimate is strongly seasonal and prone to severe water shortages. Recent changes in climate trends have induced shifts in seasonality, thus exacerbating droughts, wildfires, and adverse water shortage effects on the environment and economy... We discover that the onset of the rainy season has been progressively delayed since the 1960s, and as a result the precipitation season has become shorter and sharper in California."

Ellison et al. 2017: "Effects of forests on water and climate at local, regional and continental scales through change in water and energy cycles. (1) Precipitation is recycled by forests and other forms of vegetation and transported across terrestrial surfaces to the other end of continents. (2) Upward fluxes of moisture, volatile organic compounds and microbes from plant surfaces (yellow dots) create precipitation triggers. (3) Forest-driven air pressure patterns may transport atmospheric moisture toward continental interiors. (4) Water fluxes cool temperatures and produce clouds that deflect additional radiation from terrestrial surfaces. (5) Fog and cloud interception by trees draws additional moisture out of the atmosphere. (6) Infiltration and groundwater recharge can be facilitated by trees. (7) All of the above processes naturally disperse water, thereby moderating floods."

Ellison further explains: "By evapotranspiring, trees recharge atmospheric moisture, contributing to rainfall locally and in distant locations. Cooling is explicitly embedded in the capacity of trees to capture and redistribute the sun’s energy (Pokorný et al., 2010). Further, trees’ microbial flora and biogenic volatile organic compounds can directly promote rainfall. Trees enhance soil infiltration and, under suitable conditions, improve groundwater recharge. Precipitation filtered through forested catchments delivers purified ground and surface water (Calder, 2005; Neary et al., 2009)."

Pokorny et al. (2010) wrote: "Ecosystems use solar energy for self-organisation and cool themselves by exporting entropy to the atmosphere as heat. These energy transformations are achieved through evapotranspiration, with plants as ‘heat valves’... While global warming is commonly attributed to atmospheric CO2, the research shows water vapour has a concentration two orders of magnitude higher than other greenhouse gases. It is critical that landscape management protects the hydrological cycle with its capacity for dissipation of incoming solar energy."

This plan fails to provide any assessment or mitigation for these ongoing cumulative impacts that affect lives locally, regionally, nationally, and internationally. Barnosky et al. wrote of these problems: "Localized ecological systems are known to shift abruptly and irreversibly from one

state to another when they are forced across critical thresholds. Here we review evidence that the global ecosystem as a whole can react in the same way and is approaching a planetary-scale critical transition as a result of human influence. The plausibility of a planetary-scale 'tipping point' highlights the need to improve biological forecasting by detecting early warning signs of critical transitions on global as well as local scales, and by detecting feedbacks that promote such transitions. It is also necessary to address root causes of how humans are forcing biological changes."

There are many studies available throughout science that pertain to these effects. The availability of science that documents well-understood processes within the water cycle makes the absence of any discussion or consideration of the cumulative effects that this plan increases even more disturbing

6. Importance of Fog; Reduction of Fog; Reduction of water intake in water cycle

The disruption from ongoing climate change, coupled with the loss of thousands to millions of acres of canopy cover, has produced lengthier hot and dry seasons and fire seasons both here and in California in general, as documented in Williams et al. 2019, and Williams et al. 2020. Droughts and low water years have been more frequent and extreme in the first 20 years of the 21st century, yet there is no mention in this plan, or past plans, of how intricately linked forests are with the water cycle (Fischer et al. 2014, EPA 2017, Vose et al. 2017, Cook 2018).

Previous public comments on past THPs in this watershed and other nearby watersheds have underscored the importance of fog in this coastal redwood ecosystem.

According to a 1998 study by T.E. Dawson on the effects of fog in the California redwood forest entitled "Fog in the California redwood forest: ecosystem inputs and use by plants":

> "During the [3-year] study period, 34%, on average, of the annual hydrologic input [by plants inhabiting the heavily fog inundated coastal redwood forests of Northern California] was from fog drip off the redwood trees themselves (interception input). When trees were absent, the average annual input from fog was only 17%, demonstrating that the trees significantly influence the magnitude of fog water input to the ecosystem."
>
> … In summer, when fog was most frequent, ~19% of the water within *S.sempervirens* [coastal redwood], and ~66% of the water within the understory plants came from fog after it had dripped from tree foliage into the soil; for *S.sempervirens*, this fog water input comprised 13–45% of its annual transpiration. For all plants, there was a significant reliance on fog as a water [input] source, especially in summer when rainfall was absent."

In this plan, the RPF touches on "Fog Drip" in Section 4(I), part (E), "Potential On-Site Effects", under the "Peak Flow Effects" (page 121). This is the only section in the THP that the RPF mention fog drip loss. But rather than addressing the effects of lost fog drip in terms of lost water input into the watershed and the water cycle, the primary negative effect of logging, the RPF only considers peak flow effects. That is, the analysis only considers whether a reduction in canopy will increase river peak flows from fog drip.

The RPF writes:

> "It is anticipated that reduced non-winter fog drip from harvesting a tree will be generally offset by reduced canopy interception, evaporation, and transpiration will be retained that will continue to capture fog and allow it to drip to the soil below."

The above sentence does not make any sense and we cannot infer it's meaning. The RPF continues:

> "In those areas where there is sufficient removal of canopy to require the establishment of a new forest, there will be little or no fog drip occurring... Based on the above findings, I believe that no significant individual or cumulative peak flow or fog drip altering effects are likely to occur as a result of the proposed operation."

Once again, the THP fails to provide any quantitative, measurable, scientifically backed arguments. All we have to consider are subjective, meaningless, non-informative statements based on mere opinion.

Had the RPF actually calculated the change in hydrologic input as a result in the reduction of fog drip from harvesting, they would understand that "34%, on average, of the annual hydrologic input" is from fog drip off the larger trees themselves. And only 17% of annual hydrologic input is from fog when these same trees are absent! By removing these trees, this plan literally, irreversibly, and immediately eliminates 15% of the hydrologic input that would otherwise occur in this timber harvest area, and fails to mention any loss whatsoever.

And, according to the RPF, any trees that are removed no longer require water, so any loss of fog drip would be offset by the removal of these trees. This is unbelievably flawed, circular reasoning! Is the RPF proposing that if we were to remove all trees, and as a result, lose all fog drip and 34% of the hydrologic input to the watershed, there would be no impact on the watershed whatsoever?!?

The half-truths and falsified arguments, found throughout the entire THP, and overwhelming satellite evidence presented herein, beg the question:

What is the intent of this project?

This project will only serve to create a dried out, deforested scrubland of the South Fork Gualala River watershed, similar to the other desiccated watersheds we are seeing all over Northern California. This watershed and its wildlife are already significantly struggling to survive from drought, a lack of older trees, and a continuous onslaught of unregulated and disturbing destruction.

V. Conclusion

Given the overwhelming and irrefutable scientific and factual evidence provided throughout this public comment, it is clear that THP 1-21-00007-SON, Nobles, is woefully misguided, has completely failed to provide an accurate cumulative impacts analysis as required by law, and should be denied. The Middle South Fork Gualala and Haupt watersheds should be off limits to any future timber harvesting until adequate cumulative impacts, baselines, and thresholds have been scientifically established.

Sincerely,

Ethan Arutunian
Friends of the South Fork Gualala

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