

CENTER for BIOLOGICAL DIVERSITY

August 20th, 2018

CalFire Timber Harvest Review Team  
Northern Region, Redding CA

**RE: Comments Regarding THP 2-17-070 SHA, “Artemis,” Recirculation**

The following additional comments are submitted on behalf of Battle Creek Alliance (BCA), Center for Biological Diversity (CBD), Ebbetts Pass Forest Watch (EPFW), and the Environmental Protection Information Center (EPIC), regarding Timber Harvest Plan 2-17-070 SHA (named Artemis), submitted by Sierra Pacific Industries (SPI) and recirculated because of the addition of "Significant New Information to the Administrative Record" for the subject THP. Please consider these comments as significant environmental concerns raised during the review team process, and accordingly, provide a written response to each point raised prior to issuing a Notice of Conformance for this THP.

Multiple comment letters containing supporting evidence have been submitted pertaining to the Artemis THP. These letters were submitted on 10/31/17, 12/8/17, 1/26/18, 1/30/18, 1/31/18, 2/4/18, 2/5/18 (four letters), and 5/24/18. We incorporate by reference all comments in all previous comment letters, including all points raised and all supporting evidence submitted, into our comments here regarding the Artemis THP and its recirculation. All previous comments are relevant and substantially related to the issues and materials that are considered "Significant New Information" and the subject of the recirculation.

All of these comments are considered to be part of the Administrative Record for the Artemis THP. Further, all comments listed above were submitted prior to the issuance of a Notice of Conformance (NOC) for the Artemis THP. Therefore, prior to the issuance of a NOC for the Artemis THP, CalFire's Timber Harvest Review Team (CF) must respond in writing to all points raised and evidence presented in all comment letters listed herein, regardless of any artificially-construed public comment deadlines. Neither CF, nor SPI, have adhered to the artificially-construed timelines in the Forest Practice Rules (FPRs) in the review and consideration of the Artemis THP. Accordingly, we find no legal or regulatory reason why CF

should not consider and respond to all comments submitted, all points raised, and all supporting evidence provided, prior to the issuance of a NOC for the Artemis THP.

### **Additional Comments and Evidence in Response to Recirculation**

Enclosed please find our additional comments and attached supporting evidence in response to the additional information that constitutes "Significant New Information" added to the Administrative Record for the Artemis THP. This added information has triggered a recirculation of the plan, which has given the public/interested parties only 30 days to inspect, analyze, and reply to the changes.

Our enclosed comments and substantive evidence show that the additional material submitted by SPI that is considered "Significant New Information":

1. is largely not relevant to the THP, the watershed area affected by the THP, and THP-related cumulative watershed effects;
2. contains confusing, false, contradictory, and materially-misleading information;
3. fails entirely to address the significant environmental concerns raised in all our previous comments and in these additional comments;
4. does not provide a substantial, evidentiary basis for CF to determine that the Artemis THP is in conformance with the Forest Practice Act and Rules. In light of the full record, approval of this THP 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.

### **Discussion of additions to recirculated Artemis THP 2-17-070 SHA**

Page 123 is listed as having a revised discussion for the "Description of Assessment Area and Watershed Assessment Area". We compared the original page and the revised page, but can find no difference between the two pages.

Page 124 adds some Past Projects. By confining the list to the Planning Watershed, the list still does not give a factual accounting of the number of acres which have actually been logged, thus minimizing the impacts in the paper record. This word-game minimization doesn't change the real number of acres, or the cumulative impacts which are occurring on the ground and are not being analyzed, prevented, or mitigated. (See the all-inclusive list and maps of THPs from CF's database included with our first comment.)

Page 124 lists the Dry Gulch THP, 2-10-003 TEH, as a current project, and additionally states that Pre-Commercial Thinning operations are occurring. Page 35 of this THP presents a box which lists water drafting sites. The Dry Gulch THP also presents a

description box on page 15 detailing its drafting locations. Five of its six drafting locations are the same as this THP's. Water Drafting is again mentioned on page 126 of this THP under "Agricultural Supply", but not included under the sub-headings for other beneficial uses. Under "Potential Impacts" (page 126) the THP states "Water used for dust abatement as part of this project...is miniscule and will have no effects on downstream agricultural supply". Saying an amount of water is "minuscule" is not a clear, enforceable standard being set or met, and does not meet the intent of the Act or Rules, such as 14 CCR § 897(b)(2), 14 CCR 897 and 898.2.

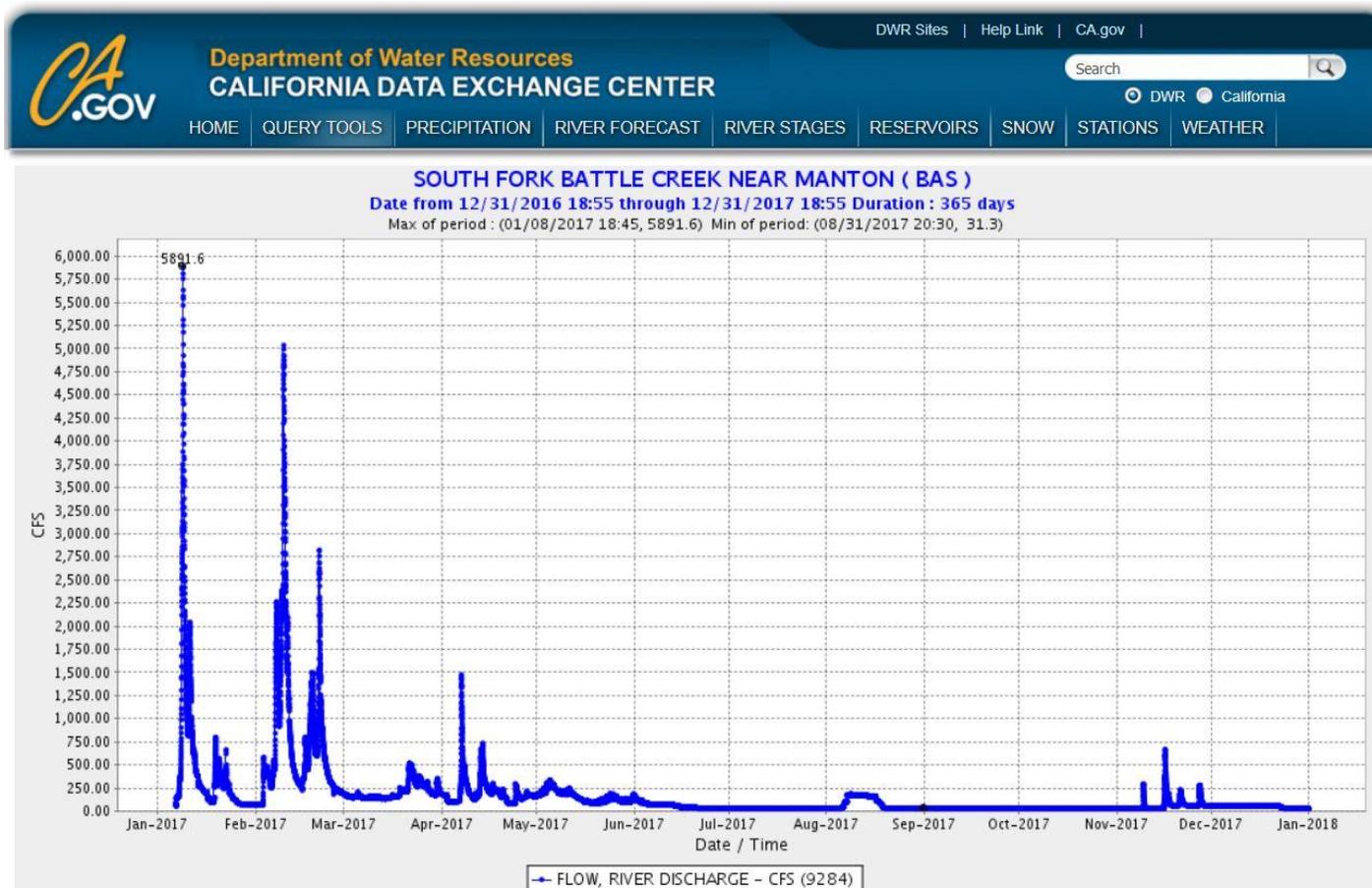
This THP provides insufficient evidence to assure SPI's water drafting is not causing damage and significant effects to the beneficial uses of the State's waters. The THP asserts on page 35 that water will be drafted likely between May and October at the rate of 15,000 to 20,000 gallons per day for this THP alone. Page 36 states that the rate will not exceed 200 gallons per minute and in Class I streams drafting will be suspended if the flow falls below 2 CFS (cubic feet per second). Unfortunately for stream, beneficial use, and fauna health, there is no specific, substantive methodology supplied to describe how or when the flow will actually be monitored or measured. There is a brief paragraph on page 36 which states a formula, and a vague "if pool volume is reduced by 10 percent, etc." but this all depends on the "operator" performing calculations and measurements. There is no way to guess accurately at pool volume. It must be measured by getting into the creek with tools to measure the depth after finding the pools. There is no solid, defensible plan supplied to:

- gauge what CFS exists before, during and after drafting;
- detail who will be measuring the flow, how often, where (i.e. above the drafting site to avoid seeing the impacts?), with what equipment, and with what training;
- present a report of the measurements collected and the methodology employed.

The flow of the tributary creeks in the Battle Creek watershed is reduced significantly in the dry months when drafting is occurring. Additionally, the recently passed years are generally consistently drier. Although this THP states on page 123 that the average rainfall is 50" per year, this does not account for the changes in recent drought years. (This was detailed in an Excel sheet submitted with our May 24th comment.) The 2017-2018 water year doesn't end until September 30th, but the rainfall amount so far this year is 39.48" and is unlikely to change much through the rest of August and into September.

Figure 1 is a graph of the CFS at the south fork of Battle Creek for the year of 2017. There is no data available through the Department of Water Resources website for the CFS of any of the small tributary creeks, including Digger Creek. No CFS data is supplied by the THP. The south fork of Battle Creek is much wider and deeper than the small tributaries, so has a larger amount of CFS, but still clearly

demonstrates the low flows during the months this THP says it will be reducing the flows further.



**Figure 1. CFS for the south fork of Battle Creek in 2017. 2017 was one of only three years since 2003 which received over 50" of rain. Although the CDEC station on the northern edge of Battle Creek watershed received 64.56" of rain in 2017, the low level of CFS during the May to October period when water drafting occurs is still clear in the graph above.**

The THP does not provide any clear standards, measurements, or plans regarding water drafting. It does not meet the "sufficient detail" standard required by law to inform decision-making and safeguard against cumulative impacts and significant environmental harm. There is no evidence presented to provide proof no effects are likely to occur. There is no data supplied.

Pages 125 and 232.14-232.28 add SPI's Battle Creek Work Plan (2015) written for the Central Valley Regional Water Quality Control Board (CV Water Board).

This is a document similar to the THP, which is primarily generalized information with little specific factual evidence. We have spoken with CV Water Board staff to ascertain what follow up information they have received that the SPI Work Plan itemized. The staff mentioned that the work plan was not part of any regulatory requirement, so the work plan and the actions outlined in it are not enforceable by the Water Board.

Page 232.21 states that SPI will continue their "THP preparation as per our Option 'a'...". Our previous comments detail the issues with SPI's Option "a" and the failures of it, including its basis which relies on decades-old information which has not been updated since it was first submitted. Page 232.21 also includes the statement that their "process provides a detailed analysis of an entire watershed by a trained professional". It isn't clear if SPI refers to an actual entire watershed, i.e. the Battle Creek watershed, or is referring to a smaller planning watershed as they usually do. In either case, there is no mention of a professional hydrologist in either the Artemis THP or this Work Plan document. As we discuss in the comparison between a 2006 THP and this THP later in this document, there was a minimal amount more information included in the 2006 THP regarding stream conditions than there is in this 2017 THP, but no detail on how the information was arrived at. No hydrologist was named.

Page 232.23 refers to SPI's 2012 report "Greater Battle Creek Turbidity Monitoring: Updates and Additions". That 2012 James and McDonald report is primarily about Bailey Creek, as their other instream monitors had only 100 days of data at the time the report was written. Professional statistical hydrologist Jack Lewis remarked about the report: "The report is unpublished and unreviewed. It focuses on the upper part of the watershed, which has the least logging, lowest slopes and cleanest creek, Bailey. Our [BCA's] Upper Bailey Creek site is by far the cleanest in our samples as well." (Attachment in original comment)

Additionally, at least 3 staff people (Jacqueline Matthews, Griffin Perea, Angela Wilson) at the CV Water Board have told us in past years that they have repeatedly requested SPI's raw data for these instream monitors, but SPI has never provided it. Consequently, there has been no independent review of that data to evaluate SPI's self-reported results and conclusions. This does not uphold the "sufficient detail" required by the FPRs.

Pages 232.23 to 232.24 reference SPI's "Post-Wildfire Salvage Logging, Soil Erosion, and Sediment Delivery-Ponderosa Fire, Battle Creek Watershed, Northern California" document. This document, and the Water Board's site inspection, were reviewed by Dr. Tom Myers and Jack Lewis. These reviews detail the significant flaws in the study design the report is based upon. Dr. Tom Myers' March 4th, 2013 review writes: "The inspection report and the study it reports on proves nothing. The study design is inadequate because the control sites are too steep, not comparable to the sites that received a logging treatment. The inspection report does not provide sufficient data with which to assess their comparability, such as drainage area or canopy density." **(Attachments with original comment)**

Page 232.25 provides a graph regarding ground cover recovery. CV Water Board staff were provided no details or methodology. There is no detail in the document regarding how the sites were selected, where they were in relation to the fire, or what plant species were present. The species are particularly important for judging true effects and the validity of SPI's claims. Our on-the-ground experience of the post-fire, salvage logged land in the Battle Creek watershed is that most of the burned, clearcut, and salvage logged landscape is dominated by non-native, invasive species of plants which are resistant to herbicides.

Without the inclusion of the very basic details of sites and species, this is another SPI-produced obscuration without any substantive, factual evidence to support it.

Page 232.26 states that SPI has collected herbicide samples at 37 locations since 2000. As with other SPI self-reported results detailed throughout this comment, there is no basic methodology regarding their sample collection supplied. We spoke to the Water Board to ask for any information they have been given by SPI regarding the data collection. The Water Board has no information or knowledge regarding how SPI collects its samples. Without knowing if samples are collected upstream or downstream of logging and herbicide application, after rainfall or in dry periods, and the length of time since herbicide application, any self-reported results from SPI prove nothing about what effects are occurring, and are not the factual evidence the THP requires.

Additionally, CV Water Board staff informed us: "I'm unaware of any herbicide sampling done by SPI, or their methods for when they do that type of sampling. We have learned that grab samples cannot gather enough water to detect pesticides, so if they do grab samples they probably will come back non-detect. To clarify, It's an issue that the pesticides are only detectable at very, very low concentrations. From a stream or river, a typical 1-liter bottle doesn't have enough of the chemical in it to be detectable, thus very special methods are needed to detect pesticides in aquatic environments. The USGS is working on a sampling methodology to detect these, but we currently don't have this sampling method, at least one that has been vetted." **(Attachment CV Water Board)** SPI's pages regarding herbicide testing are exactly the same in every THP we have seen. SPI states that they collect grab samples. Therefore, the CV Water Board statement makes it clear that their samples and results are invalid.

This page also states "the following map summarizes SPI Monitoring Activities" but there is no map on the page or later.

Pages 232.27 to 232.28 detail many action items, including providing the CV Water Board with an annual report of SPI's follow up to the Work Plan items, beginning in 2016. As of Aug. 8th, 2018 staff at the CV Water Board have not received any reports for any of the action items.

This entire report consists of statements on paper that have produced no subsequent reports or solid data with appropriate explanation of methodology to inform a reasonable analysis of SPI's impacts. The current THP lacks the basic information to perform a reasonable analysis of its impacts. Consequently, this THP does not conform to the FPRs or the PRC laws.

Page 126 adds a few sentences regarding the addition of the USFS report "Aquatic Condition Report for the Upper Battle Creek Watershed". This report was produced by Lassen National Forest in 2001 (i.e. 17 years ago) regarding the federal land which is upstream of SPI's land. Along with the passing of almost 2 decades of time, that land has

not suffered the extreme disturbance that SPI's land has, and has no relevance to conditions downstream. The only potential use of that report would be to establish baseline conditions for stream conditions in the past, in undisturbed land, to measure SPI's current effects against.

Page 127 adds a March 2018 USFWS press release regarding Chinook salmon. Firstly, a press release is not a high quality document to provide factual evidence regarding cumulative effects. Secondly, the THP states that the press release means "chances for re-establishment of this species here are good due to the trending improvement of habitat conditions...". This statement avoids and misrepresents much of what the press release says though. E.g.:

--Nearly the entire in-river juvenile population was lost in 2014 and 2015 due to extreme drought.

--"Over the course of several decades, this reduced the number of winter-run Chinook salmon from four large populations numbering in the in the hundreds of thousands, to a single, imperiled population that is mostly comprised of hatchery fish."

--"Today, Sacramento River winter-run Chinook salmon are listed as an endangered species under both federal and state law. NOAA Fisheries also considers winter-run Chinook salmon among eight marine species most at risk of extinction..."

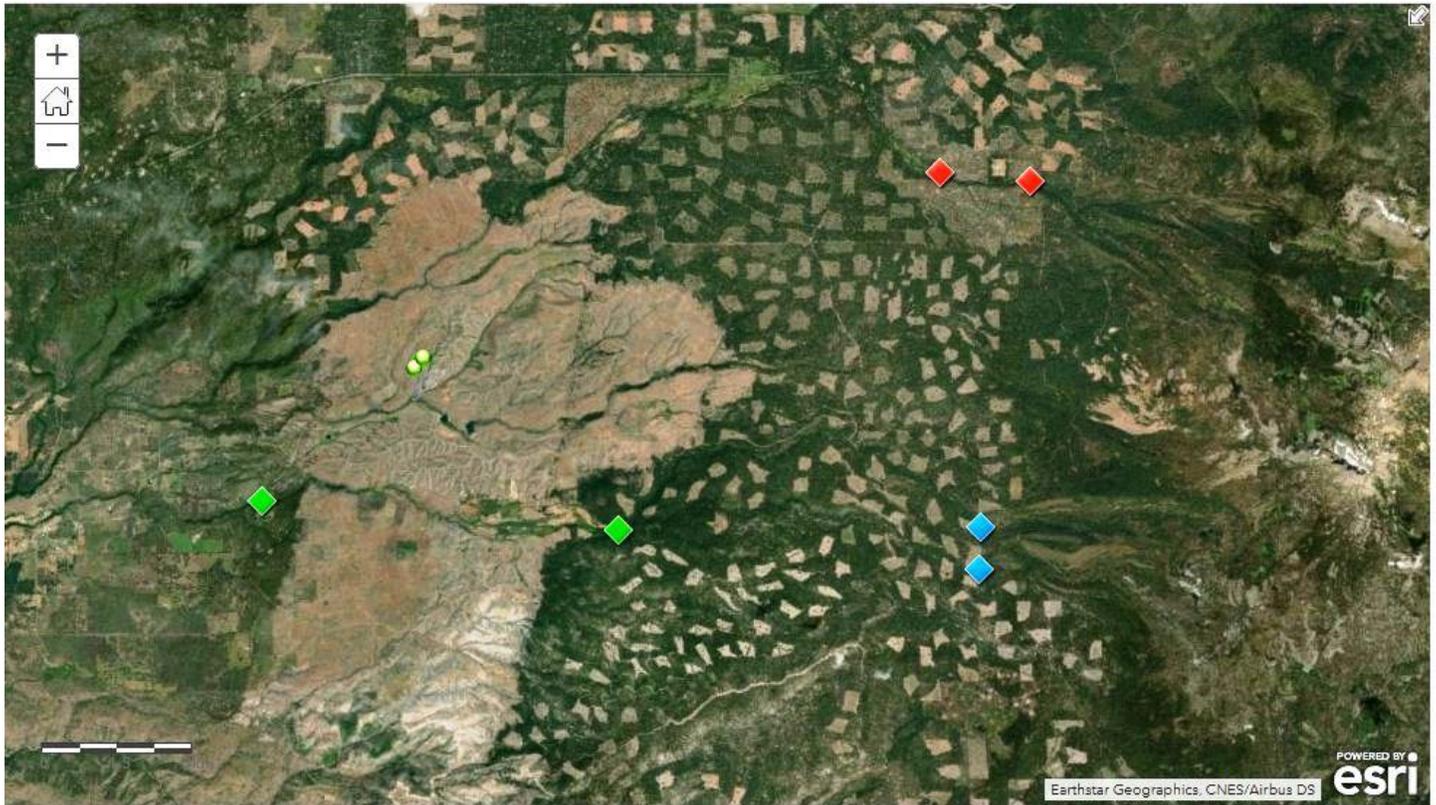
This press release adds no factual evidence to inform the analysis of SPI's cumulative effects. It doesn't address the SPI-chosen area for the cumulative impacts assessment included within the THP at all. SPI, and the THP, limits the area for cumulative impacts assessments to a planning watershed and a small percentage of their industrial timberland. This reductive system has been used for the multitude of THPs in the Battle Creek watershed to avoid a factual watershed-scale cumulative impacts analysis. Here, SPI wants to suddenly include information from outside their chosen assessment area that they seem to believe supports them. Yet, nothing is included from the larger watershed area about their negative impacts. Impartial decision-making based on facts cannot allow SPI to have it both ways.

Page 127 to 136 adds an SPI-produced "Bioassessment and Water Quality for South and North Forks Digger Creek" document.

Please note, none of the maps for the area ever call the more northern fork of Digger Creek "North Fork". It's always labeled as "Digger Creek", while the south fork is labeled as "South Fork Digger Creek". We will use that nomenclature here.

Both forks begin to the east of the industrial timberland (upstream), in Lassen National Forest land, and flow east to west. Digger Creek is the larger branch. The confluence of both branches is approximately ¼ mile east of the Tehama county end of

Forward Road in Manton. As may be seen on the following map (Figure 2), one of our Citizen's Water Monitoring sites is ¼ mile west (downstream) of the confluence.



**Figure 2. The industrial timberland area of Battle Creek watershed. The regularly spaced brown holes are clearcuts. The large brown area is from the Ponderosa Fire of 2012 and the subsequent salvage logging of it. The uncut area on the right hand side is Lassen National Forest where the Battle Creek tributaries, Digger and Bailey Creeks, originate. The green diamond shapes mark 2 of our water monitoring sites on Digger Creek, the right hand being the higher (upstream) site. The blue diamonds mark the Digger and South Fork Digger Creek locations at the boundary between SPI and Lassen Forest land. The red diamonds mark SPI's data stations on Bailey Creek as detailed in the James and MacDonald 2012 report regarding Bailey Creek referred to on page 232.2 of this THP.**

The new SPI Bioassessment added to the THP has no map or description of where their data is being collected from. If the data is being collected from near the upstream Lassen Forest boundary as their Bailey Creek data is, it has no relevance to what effects are occurring in the cutover industrial timberland downstream. All of the numerical and graph figures and conclusions in SPI's document are worthless for a reasonable judgment of cumulative impacts without the most basic foundation of knowing where the data was collected from in relation to the landscape. This document provides no evidence of having been peer-reviewed by a professional hydrologist before being inserted into this THP's recirculation. Dr. Peter Green from U.C. Davis has reviewed the SPI document and submitted a comment to the Timber Harvest Review Team regarding it:

[ftp://thp.fire.ca.gov/THPLibrary/Cascade\\_Region/THPs/THPs2017/2-17-070SHA/Public%20Comments/20180806\\_2-17-070SHA\\_PC%2314.pdf](ftp://thp.fire.ca.gov/THPLibrary/Cascade_Region/THPs/THPs2017/2-17-070SHA/Public%20Comments/20180806_2-17-070SHA_PC%2314.pdf) . (E.g. "This report

does not identify, by either detailed map or coordinates, where the water quality sampling was conducted. Without this information, the report has no relevance to identifying impacts that may be present from past harvests.")

This review, as well as the reviews by Dr. Tom Myers and Jack Lewis mentioned above regarding SPI's "Post-Wildfire Salvage Logging, Soil Erosion, and Sediment Delivery-Ponderosa Fire, Battle Creek Watershed, Northern California" document, provides further evidence to support our demand that the Timber Harvest Review Team does not accept the misleading SPI document regarding Digger Creek. **(Attachments previously submitted)**

Pages 129 and 232.29 add the two page (plus photos) 2017 USFWS "Summary of South Fork Battle Creek Fine Sediment Evaluation Survey". This was a survey whose furthest upstream point was approximately 5 miles downstream of the confluence of Digger Creek with Battle Creek; it is more than 13 miles downstream of the lowest point of the industrial timberland area of this THP. As mentioned above regarding the USFWS press release, a significant amount of information is ignored by the brief quote included in this THP. Along with the misrepresentation, SPI is again applying a double standard by using information from far outside their chosen assessment area.

Some additional quotes from this USFWS survey which the recirculated pages of the THP don't acknowledge:

"The two most upstream pools, although improved in condition and maximum pool depth compared to previous surveys, still had a significant amount of fine sediments present in both the thalweg and depositional areas."

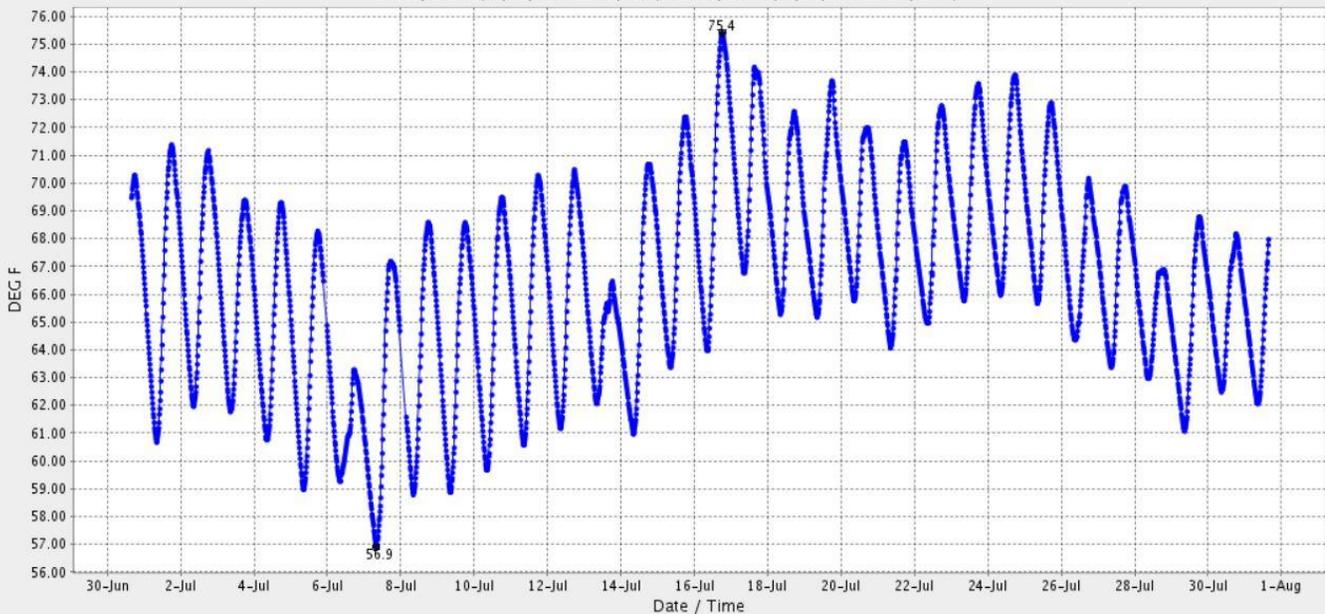
"No adult Chinook were observed during this year's survey, potentially due to the low numbers of individuals returning to Battle Creek in 2017."

This survey did not mention any data regarding the ongoing high stream temperatures. Jack Lewis wrote of the Digger Creek temperature issues in his letter dated February 3rd, 2018, which was submitted as a comment on this THP. (E.g. "The BCA data sets show very clearly that the combination of wildfire and salvage logging have had major impacts and that the water quality downstream from the project area (measured at [site] DCH) is severely impaired, especially with regard to water temperatures and salmonid tolerances".) Figures 3, 4, and 5 are graphs of Department of Water Resources stream temperature data from the south fork of Battle Creek, in the vicinity of where the highest upstream point of the referenced USFWS survey was performed. Figure 2 illustrates stream temperatures in the south fork of Battle Creek in July, 2018. Figures 3 and 4 are the data from July 2008 and 2017 respectively, provided for comparison. Generally, aquatic species need temperatures below 68° (20°C) to survive; lower temperatures than that are optimal. **(Attachment Carter 2005)**

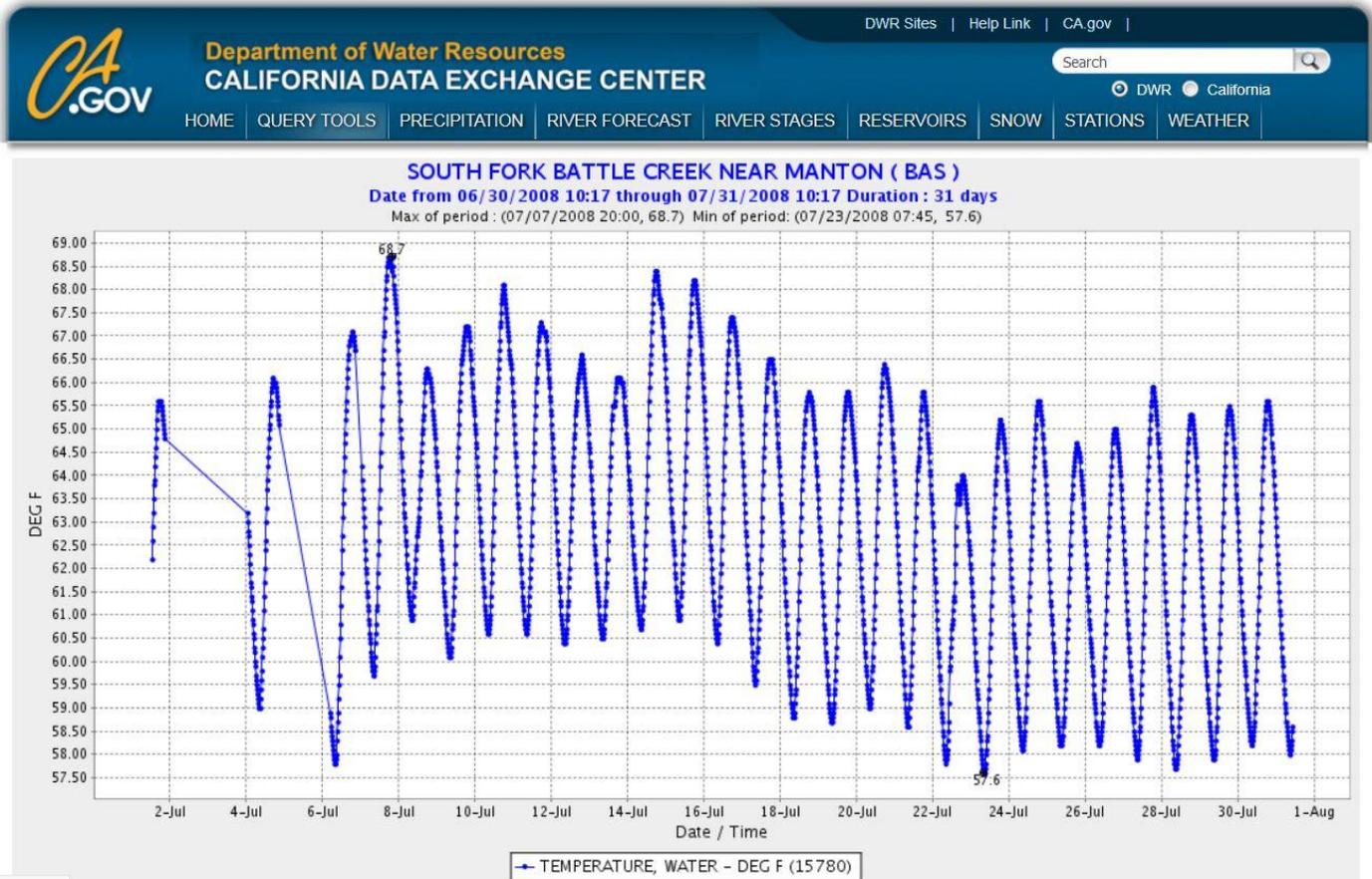
**SOUTH FORK BATTLE CREEK NEAR MANTON ( BAS )**

Date from 06/30/2018 15:21 through 07/31/2018 15:21 Duration : 31 days

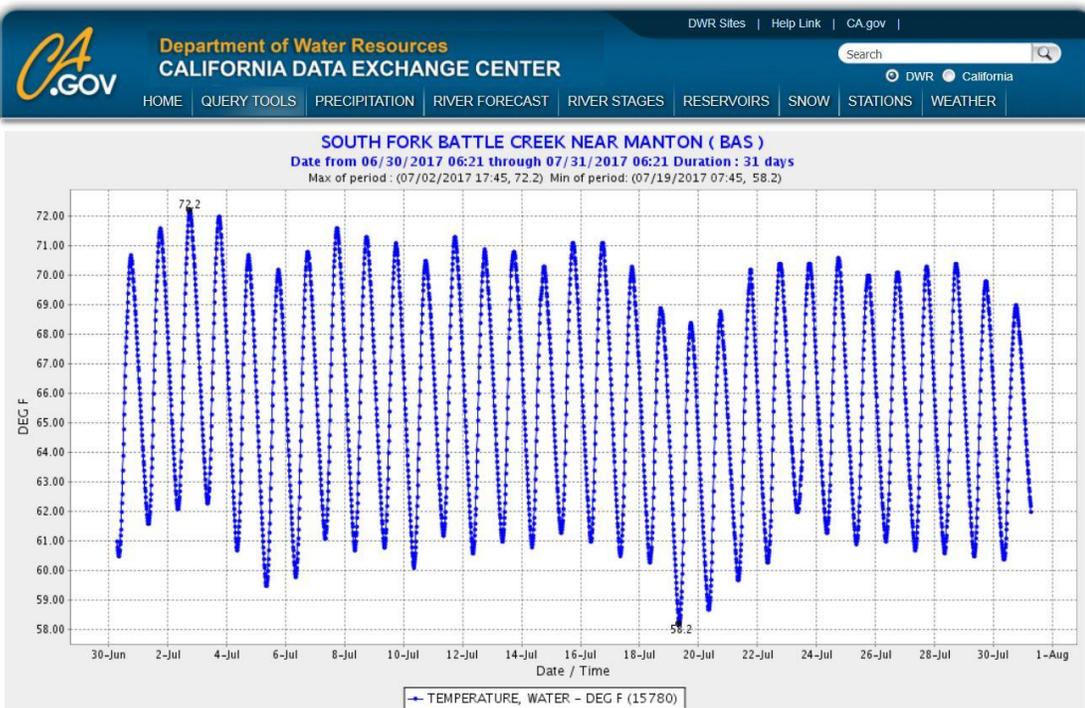
Max of period : (07/16/2018 18:15, 75.4) Min of period : (07/07/2018 07:30, 56.9)



**Figure 3. This graph shows that the south fork of Battle Creek had a high temperature of over 68° for 27 days in July, 2018. 19 days were 70° or more. On July 23rd, 2018 the Carr fire in the Redding area began. Within 2 days the thickness of the smoke dimmed the sun, with the effect that ambient air temperatures were lower than forecast. It's reasonable to assume that this lowered the stream temperature from July 26th onwards.**



**Figure 4. The same station showed only 4 days in July 2008 which were over 68° and no days were over 70°. 2008 is the earliest graph for July available for this station.**



**Figure 5. The water temperature high was over 68° every day in July 2017; 26 days were above 70°.**

Page 130 adds a short paragraph regarding the 2011 report from CalFire et al. (Interagency Task Force) "A Rapid Assessment of Sediment Delivery from Clearcut Timber Harvest Activities in the Battle Creek Watershed, Shasta and Tehama Counties, California". Again, the THP only quotes one sentence from the report, which is an omission of some of the relevant findings and recommendations.

One of the Task Force Report's recommendations was:

**Recommendation 10:**

Engage in a follow-up study to relate the results of the assessment to water column data (i.e., turbidity) and in-channel physical habitat characteristics (e.g., particle size, pool fining, etc). A follow-up study should also address the potential for timber harvest associated peak-flow induced increases to suspended sediment, turbidity, bedload transport, and/or channel alterations. (pg 53)

The Task Force was unable to evaluate the potential for indirect water quality impacts due to clearcut harvesting (for example, potential channel modifications and increases in suspended sediment and turbidity associated with logging-induced increases in peak flows), but the issue of timber-harvest-induced changes in hydrology in ground-water dominated, young volcanic terranes such as Battle Creek watershed remains an open question. (pg 54)

In 2016, we received documents from a Public Records Act (PRA) request. These documents included emails written in 2013, including one from a member of the Task Force. **(Attachment, Short TF email)** On May 28th, 2013, staff member Bill Short wrote: "As we have discussed previously, a significant hole in the 2011 BC task force assessment (which we acknowledged) was the timing of the field work (because the assessment was performed late in the season, it was recognized that there was a potential to miss subtle indicators of erosion and sediment delivery from the harvest units that may have been obscured over the time period between the last rainfall and the assessment). I believe that it is important for us to follow-up on this aspect of the assessment so that we can respond if any questions are asked in the future."

After receiving these emails, we questioned Assistant Secretary of Forest Resources Management Russ Henly. We asked if any Task Force follow up had been performed since 2013. On May 27th, 2016 he responded: "No follow-up work was performed by the Task Force." He also stated: "Section 6.7 Assessment Limitations in the Battle Creek report acknowledges that the assessment area was not subject to significant stressing storm events for several seasons prior to September 2011, [when the 5 days of field visits occurred] when the then-recent harvest activity was assessed." **(Attachment Henly TF email)**

Hydrologist Tom Myers wrote a technical memorandum for us on August 4th, 2012. **(Attachment Myers 8/4/12)** Dr. Myers wrote: "The Interagency Task Force [ITF] report, which the THP discusses, does not assess sediment conditions in the streams; it focuses only on conditions on harvest sites and found just one example of a low-magnitude sediment delivery. In contrast, during a brief tour from public roads in the watershed in April 2012, Myers (2012) saw several examples of sediment and turbidity moving along roadside drainages and from at least one harvest access road. This visit occurred during a

minor rain event. The ITF visit occurred during September 2011, a time when many signs of erosion and sediment could have been obliterated due to four to six months of dry weather.

\* The ITF report should be relied on only sparingly until the work can be repeated during a wetter period so that sediment movement and erosion processes can actually be observed.

The ITF report also does not assess sediment conditions in the streams. The statement that the ITF 'saw no significant direct water quality impact related to clearcut harvesting in the assessment area' **is meaningless because the ITF did not assess stream conditions.**" (Emphasis added.)

The addition of the 2011 Task Force report to this THP does not provide relevant factual evidence to prove that significant impacts are not occurring, and have not occurred since 2011. In fact, it provides evidence that significant effects are not being adequately followed up on.

### **THPs being cut and pasted for many years**

In our original comment we expressed our concerns regarding the same generalized information being used in many THPs. This is of concern because that practice supplies no factual evidentiary basis to make informed decisions regarding the effects occurring on the real land. Following are some specific examples of significant cumulative impacts occurring over time which the current THP does not detail or address.

#### ***Overall:***

There are two 2017 THPs from SPI filed in the Battle Creek watershed, "Texter" 2-17-023 SHA and Artemis 2-17-070 SHA. Artemis is adjacent to the 2006 "Lookout" THP 2-06-173 TEH. We compared the Cumulative Impacts Sections (Section IV) of these three THPs. (The hard copy pages of the 2006 THP were delivered to the Redding Timber Harvest Review Team office on March 15th, 2018.)

Much of the 2017 THPs are the same as the 2006 one, particularly the references and many of the graphs. The two 2017 plans are mostly identical, except for some place name and number changes. All of the plans repeat over and over that there are "no significant cumulative adverse effects expected due to the project" yet there are some significant changes in the verbiage between the adjacent 2006 and 2017 plans which demonstrate adverse effects are occurring and are not being mitigated.

The two 2017 plans are about 5 miles apart, but there is no mention by either of the plans of the other plan which is in the same watershed. There was no mention of the adjacent 2006 plan in the 2017 plan until we pointed that out. There is no mention of most

of the multitude of other THPs and Emergency Exemptions in the watershed which have been cut in the past 20 years. This is partly due to the use of the CALWATER 2.2 planning watershed system, which allows SPI to limit the scope of the THP assessment area to a much smaller area.

***Specific examples/comparisons to demonstrate lack of Cumulative Impacts Assessments, from the Section IV Assessments in the THPs:***

Comparison of the 2006 Lookout THP to this adjacent 2017 Artemis THP:

Page 62 of **2006** Lookout THP and page 126 of **2017** Artemis THP use identical generalized descriptions of Watershed and Stream Conditions. These meaningless descriptions apparently have been being cut and pasted from THPs for more than a decade, but do not provide any factual evidence about cumulative impacts occurring, or not occurring.

Page 74 of **2006** Lookout THP does contain a table entitled "Stream Reach and Channel Stability Evaluation" which has ratings for some aspects of watercourse health. There is no description of who determined the ratings, or how the ratings were arrived at, or how much area, or what area, was assessed to arrive at the ratings. However, even this low level of thought or evidence about the stream conditions is absent from the 2017 plans.

Page 87 of **2006** Lookout THP states "Much of the assessment area is in a multistory canopy condition." Page 133 of **2017** Artemis THP says "Much of the assessment area under SPI ownership is under even-aged management". Point: This is a significant impact and change to the canopy cover which has been ignored in the THPs and by the Timber Harvest Review Team; no mitigation is occurring.

Page 87: Road density is stated as "approximately 4 miles per square mile" in **2006**; the **2017** Artemis THP states the density is 1.95 miles per square mile. Roads haven't changed; some plans have added roads in the vicinity. Road density and the heavy equipment use of roads during logging are a significant source of sediment in waterways. See: *Lewis et al. 2018. (Attachment)* Road density also has significant impacts on terrestrial and aquatic lifeforms. **(Attachment Trombulak 2000)** There is no description of how the number of miles per square mile in the THP was arrived at. GIS Specialist Curt Bradley has calculated the number of miles by section in the THP using the THP maps. The average is 6.39 miles of roads per square mile section within the THP area and 7.1 miles of roads per square mile section when the assessment area is added. **(Attachment Bradley Roads Excel sheet)** The THP is supposed to serve the same function as an EIR. With such blatant disregard for accuracy, the rules and laws are not being upheld. The requirement that the THP contain sufficient information is not being met.

Trombulak et al. (2000) was published in "Conservation Biology" and reviews 179 papers published regarding road density. The authors detail "seven general ways roads of all kinds affect terrestrial and aquatic ecosystems" and write "Numerous studies have demonstrated declines in stream health associated with roads..."

...Roads are often built into areas to promote logging, agriculture, mining, and development of homes or industrial or commercial projects. Such changes in land cover and land and water use result in major and persistent effects on the native flora and fauna of terrestrial... and freshwater ecosystems..."

Page 133 of the **2017** Artemis THP states: "No inventory cruise data is available for the hardwood component in this area of SPI land." In the **2006** Lookout THP, page 88, SPI stated, "Hardwood cover accounts for approximately 5.7% of the basal area in the harvest areas." Point: in 2006 the THP language was generalized often also, but it was more informative than the 2017 THP. Without any inventory data, there is no attempt to show evidence that no significant impacts have occurred.

Page 131 of the Artemis **2017** THP and page 86 of Lookout THP of **2006** have identical Snag Management Tables. Page 131 Artemis 2017 adds a table that says "Snags on SPI Ownership in the CIAA" but then states: "The data in the table above was from the last timber cruise in that portion of ownership in **1999**". Point: relying on 20 year old snag data does not adequately demonstrate no significant effects are occurring.

Page 21.3 to 21.4 of **2006** Lookout THP has maps of 4 osprey nests in the Digger Creek area and description of the nest sites on pg. 84. Page 147 of **2017** plan states: "The wildlife scoping procedure disclosed no known Osprey location or site histories in the BAA". This is a fallacy, as proved by SPI's own 2006 plan. Additionally, ospreys build their nests in the broken off tops of live or dead large trees—preferably larger than ~36" dbh. The older nest trees fell; most of the large tree habitat component is gone now because of clearcutting and salvage logging, which is both a cumulative and a significant effect for many species of raptors and the members of the food web they are part of. The 2017 Artemis THP does not disclose the former nests and their loss or the loss of nesting places, all cumulative impacts occurring over time.

Page 85 of **2006** plan includes 2 generalized paragraphs regarding the Eastern Tehama Deer Herd and states "Implementation of the proposed THP should benefit deer herds by providing well-spaced early seral vegetation with adjacent forest cover, meadows and water". (See Figure 6.) That has not occurred. There is no mention of the deer herd in the **2017** plan. CDFW estimates that there were **850,000** deer in the state in 1990 and **532,621** in 2017: <https://www.wildlife.ca.gov/Conservation/Mammals/Deer/Population>

CDFW's site states: "Loss of habitat is the single most important challenge facing wildlife populations and wildlife managers today." (**Attachment CDFW**) There is no discussion of that issue in either the 2006 or 2017 plan.

### **Research Paper regarding Battle Creek watershed water quality data published**

After the close of the initial Public Comment period in February, 2018, our research paper was published in *Environmental Management*. This paper details the results of the analysis of our water quality data, which has been being collected in the Battle Creek

watershed since 2009. We had submitted the draft of the paper during the original comment period, but the peer-reviewed, published version is attached. **(Attachment Lewis et al. 2018)** Although we collect other data as well, this analysis focuses on turbidity levels in the mainstem and tributary creeks of Battle Creek. Our goal is to study and compare the stream impacts above, within, and below the industrial timberland.

Similar data has been collected in North Coast watersheds and analyzed. The analysis correlates with and substantiates what we have found in the northern Sierra watershed of Battle Creek, particularly regarding the effects from the rate of harvest. Klein et al. (2008) found "Regression analyses showed the average annual rate of timber harvest (expressed as clearcut equivalent area) explained the greatest amount of variability in 10% turbidity exceedance...Expressions of road system characteristics had high multicollinearity with harvest rate due to the close functional relationship between these variables...Much research has been conducted (on the north coast and elsewhere) on the roles of timber harvest, yarding, and road building on erosion, sediment delivery, sediment yield and water quality. Certainly other land uses affect turbidity in some locales...However, because the streams included here drain watersheds where forest is the dominant land cover and timber production is the dominant land use, the majority of anthropogenic factors relate to the timber harvest rates, silvicultural methods, and log transportation (skid trails, haul roads)." **(Attachment Klein et al. 2008)** These statements apply to the Battle Creek watershed, and the area of the Artemis THP, as well. Our data, and research paper, is evidence of the significant environmental effects occurring due to SPI's practices, and due to CF's continual approval of THP after THP, with no factual evidence to support the repetition of the statement contained in them: "No significant unmitigated cumulative impacts were identified".

### **Fire danger of plantations**

Although we sent an email to your "Public Comments" address on May 25th, 2018 with a 2018 Zald and Dunn study regarding fire severity in plantations which was published in *Ecological Applications*, entitled: "Severe fire weather and intensive forest management increase fire severity in a multi-ownership landscape", we don't see the paper in the record. Fire danger is an important aspect of a factual cumulative impacts analysis, particularly as the effects of climate change worsen fire effects both locally and statewide. Fire, and the aftermath of salvage logging, also influences water quality. The THP fails to acknowledge the significant effects on fire severity and of increased fire danger of logging large trees and replacing them with plantations of small trees. The logging of this additional plan will add to those significant effects.

The authors of the study write:

"Our findings suggest intensive plantation forestry characterized by young forests and spatially homogenized fuels, rather than pre-fire biomass, were significant drivers of wildfire severity."

Additional conclusions from this study include:

"Developing and prioritizing landscape fire management activities ...across jurisdictional and ownership boundaries **requires landscape-scale assessments of the factors driving fire severity...**" (emphasis added)... "This is particularly important in landscapes that include intensive plantation forestry, a common and rapidly expanding component of forest landscapes at regional, national and global scales...

After accounting for fire weather, topography, stand age, and pre-fire biomass, intensively managed private industrial forests burned at higher severity than older federal forests managed by the BLM... [We] argue that younger forests with spatially homogenized continuous fuel arrangements, rather than absolute biomass, was a significant driver of wildfire severity...

Fire severity was consistently higher on private lands across a range of fire weather conditions for the days of active fire weather spread..., leading us to conclude that while fire weather exerted top-down control on fire severity, local forest conditions that differed between ownerships remained important, even during extreme fire weather conditions.

Variation in pre-fire forest conditions across ownerships were clearly a significant driver of fire severity, and we believe they operated at multiple spatial scales. Private industrial forests were dominated by young trees, which have thinner bark and lower crown heights, both factors known to increase fire-induced tree mortality..." **(Attachment Zald 2018)**

Fire danger, fire severity, and fire's subsequent water quality effects are significant environmental impacts which are not being mitigated within this THP, or within SPI's overarching Option "a". Our earlier comments, which are incorporated by reference, detail the issues that are wrong with Option "a".

The Artemis THP is also adjacent to the Digger THP, 2-03-158 TEH. Page 124 of the Artemis THP originally listed the Digger THP as a "Current Project" but only listed it as 91 acres. That plan was a 993 acre plan. The recirculated page has listed the full acreage, but still does not address the significant effects which have stemmed from the older plan. The following photos in Figures 6 through 10 illustrate some of the significant effects caused by the 2003 Digger THP and subsequent emergency exemptions. The proposed Artemis THP will create more effects by cutting the land which abuts the older THP's units.



**Figure 6. 2003 Digger THP, Unit 147, photographed in May, 2008.**



**Figure 7. 2003 Digger THP, Unit 147, photographed 10 years later, April, 2018. Note the pruned, dead limbs left at the base of the single-species plantation trees also. This fire fuel is still present as of August 15th, 2018, at the height of fire season. This is a common practice. Before the 2012 Ponderosa Fire, there were many young trees in the future fire area with dead, pruned branches around their bases. (Attachment Fire Fuel photos)**



**Figure 8. Roadside edge of 2003 Digger THP unit photographed in April, 2018. A proposed unit of the 2017 Artemis THP is adjacent to this in the background.**



**Figure 9. Another roadside edge of a 2003 Digger THP unit in April, 2018, adjacent to a proposed Artemis unit.**



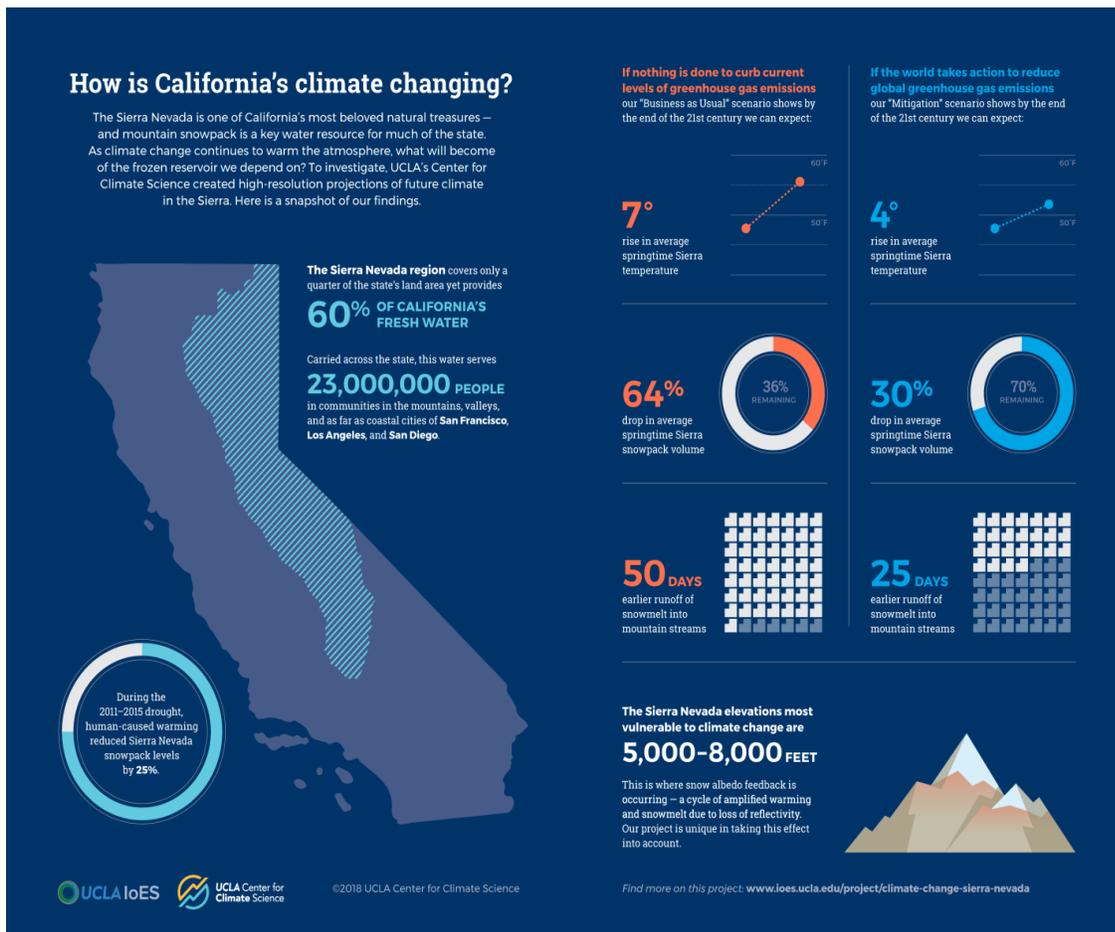
**Figure 10. The opposite side of the road, across from the 2003 Digger THP units, and proposed 2017 Artemis units, photographed in April, 2018. This WLPZ area was bulldozed during a 2012 fire. There is no regeneration or soil stabilization apparent. Pre-fire, there was a seep alongside the road here where we observed a western pond turtle residing. The habitat was destroyed by the bulldozers in 2012. Post-fire emergency salvage logging is not subject to CEQA mandates, and is ignored in the THP cumulative impacts analysis.**

## **Lack of Thresholds of Significance and Baseline Conditions, including Climate Change Impacts**

An important part of any cumulative impacts analysis is comparing current conditions with past conditions to track what changes are occurring. The Artemis THP continues on the path of significant adverse effects being amplified because no baselines or thresholds are ever set or used. 14 CCR 15064.7 states: “(a) [e]ach public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. 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.”

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 THP offers only SPI-produced concealments which do not adhere to the intent of California's lawmakers.

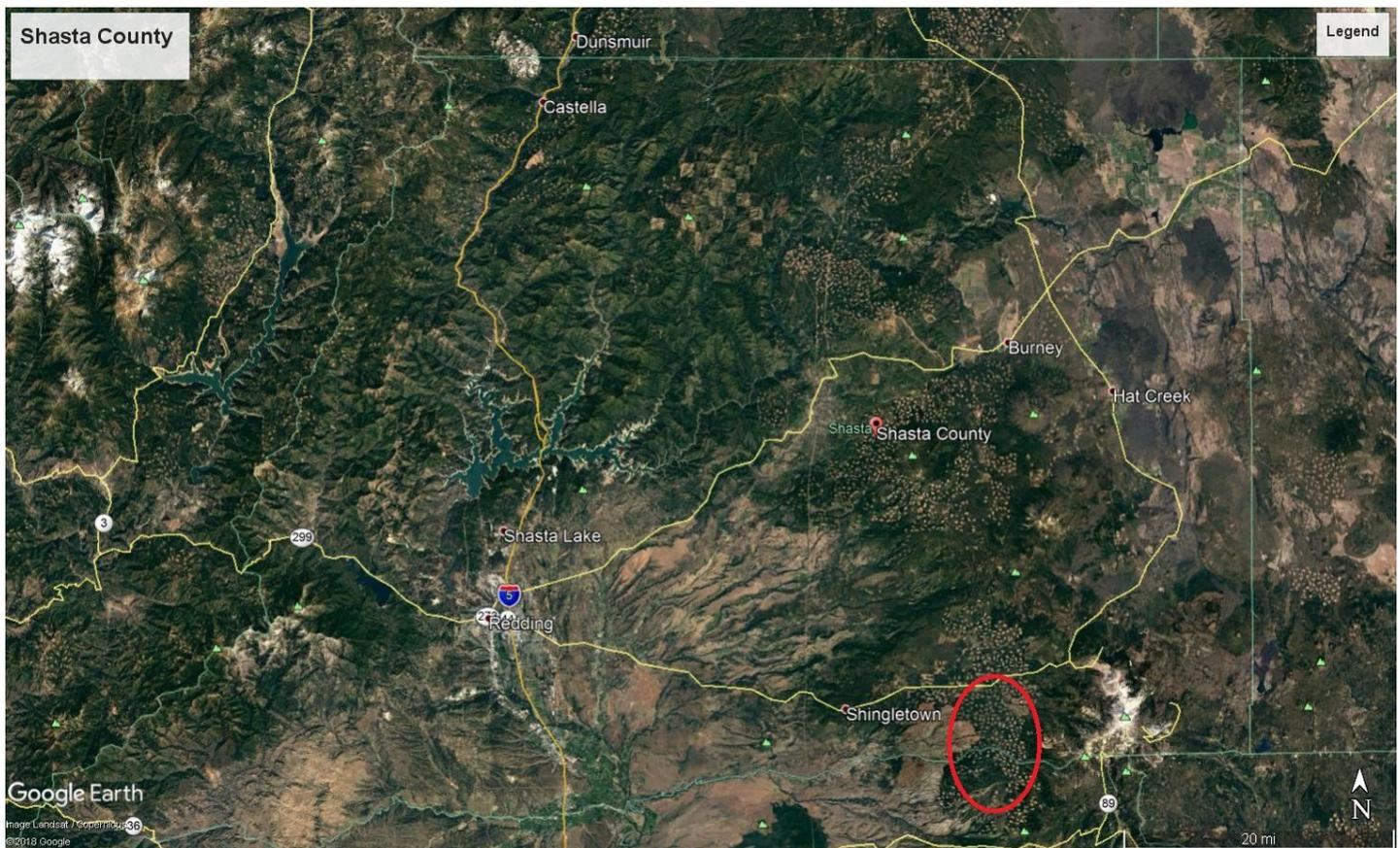
The lack of thresholds and baselines also applies to air quality and temperature being detrimentally affected. Page 124 of the THP refers to the "Air Quality Assessment Area" but the THP is generally silent regarding climate change impacts, as is SPI's Option "a". We wrote of the potentially increased fire danger and fire severity from SPI's plantations in the preceding section. Fire issues affect air quality, and air quality is not confined to an "assessment area". Additionally, higher air temperatures from loss of canopy cover can mean more rain and less snow, affecting areas far outside the assessment area of this THP. The Artemis THP's elevation ranges up to 5,880'. As may be seen in Figure 11, elevations above 5,000' are projected to be the most affected by climate change. The UCLA Center for Climate Science issued the important report “Climate Change in the Sierra Nevada: California’s Water Future” in 2018 which provides extensive evidence which is applicable to this THP and the land around and above it. **(Attachment UCLA)** The THP fails to address, or mitigate, these significant effects.



**Figure 11 . UCLA's Center for Climate Science's illustration of climate change impacts. The Artemis THP falls within the area the impacts are projected to occur.**

According to information produced by CF from its records, between January 1998 and February 2018, 554 THPs have been approved in Shasta County, which cover 432,424 acres. **(Attachment THPS approved 1998-Feb 2018)** Figure 12 shows that Shasta County is the most cut of any of the California counties, with neighboring Siskiyou County being second. The other northern California counties of Humboldt, Lassen, Mendocino, Modoc, Plumas, Tehama, and Trinity also reflect high levels of forest loss by number of acres.





**Figure 13. The visual evidence of forest cover loss in Shasta County, and the edges of surrounding counties. All of the clusters of pinhead-sized brown holes are logged areas, primarily clearcut (example in red circle in the Artemis THP area).**

In 2006, California passed Assembly Bill 32 (AB 32) to reduce greenhouse gas (GHG) emissions. The forestry sector is an important aspect of GHG reductions or emissions, either functioning as a carbon sink, or a carbon emitter. A 2018 Proceedings of the National Academy of Sciences paper analyzes "Land use strategies to mitigate climate change in carbon dense temperate forests". (**Attachment Law et al. 2018**) There is no mention of up-to-date research such as this, or its implications, in the Artemis THP recirculation.

Key points of the Law research are:

1. Natural disturbance (i.e. fire and beetle kill) has little impact on forest carbon stores compared to an intensive harvest regime.
2. Harvest and thinning do not reduce carbon emissions. Full accounting shows that thinning increases carbon emissions to the atmosphere for at least many decades.
3. Carbon returns to atmosphere more quickly when removed from forest and put in the product chain.

The Law research paper determined that "Land-use history is a major determinant of forest carbon balance. Harvest was the dominant cause of tree mortality (2003-2012) and accounted for fivefold as much mortality as that from fire and beetles combined. [Which also means a fivefold amount of GHG emissions.]" Since this THP states that it will use some of the logged trees for biomass burning, this part of the paper is pertinent: "Wood bioenergy production is interpreted as being carbon-neutral by assuming that trees regrow to replace those that are burned [as fuel]. However, this does not account for reduced forest carbon stocks that took decades to centuries to sequester, degraded productive capacity, emissions from transportation, and the production process, and biogenic emissions at the facility...Increased harvest through proposed thinning practices in the region has been shown to elevate emissions for decades to centuries regardless of product end use."

Along with the majority of scientists in the world, the Law paper concludes: "GHG reduction must happen quickly to avoid surpassing a 2°C increase in temperature since preindustrial times." The Artemis THP adds to the already-present effects of loss of mature forest cover in Shasta County and other northern California counties beyond it, and fails to protect the climate locally, regionally, and statewide, as required by State law. Ongoing approval of THPs, including this one, by a State regulatory agency fails to protect the State's climate and uphold the State's laws and the legislative intent of AB 32 to reduce emissions to 1990 levels.

### **Option "a" allowing significant environmental harm to occur, AB 1504 not being upheld**

As previously mentioned, page 232.21 states that SPI will continue their "THP preparation as per our Option 'a'..." This is part of our concern: significant environmental harm is occurring under the continued use of their Option "a".

AB 1504 (2010) codified Public Resource Code section 4512.5(e), stating that the Board of Forestry, CF, California Air Resources Board, and by extension, the regulated-timber industry, "should strive to go above and beyond the status quo sequestration rate [for carbon dioxide] and ensure that their policies and regulations reflect the unique role forests play in combating climate change."

Further, AB 1504 added Public Resource Code section 4551(b)(1) which requires the Board of Forestry to, "ensure that its rules and regulations that govern the harvesting of commercial tree species, where applicable, consider the capacity of forest resources, including above ground and below ground biomass and soil, to sequester carbon dioxide emissions sufficient to meet or exceed the state's greenhouse gas reduction requirements for the forestry sector, consistent with the scoping plan adopted by the State Air Resources Board pursuant to the California Global Warming Solutions Act of 2006."

To date, the Board of Forestry has taken no action to implement the legislative intent mandated in 2010 by AB 1504. To our knowledge, no Option "a" plan to demonstrate Maximum Sustained Production approved by CF, including the Option "a" used for the Artemis THP, has been reopened, changed, or reassessed since 1997 to

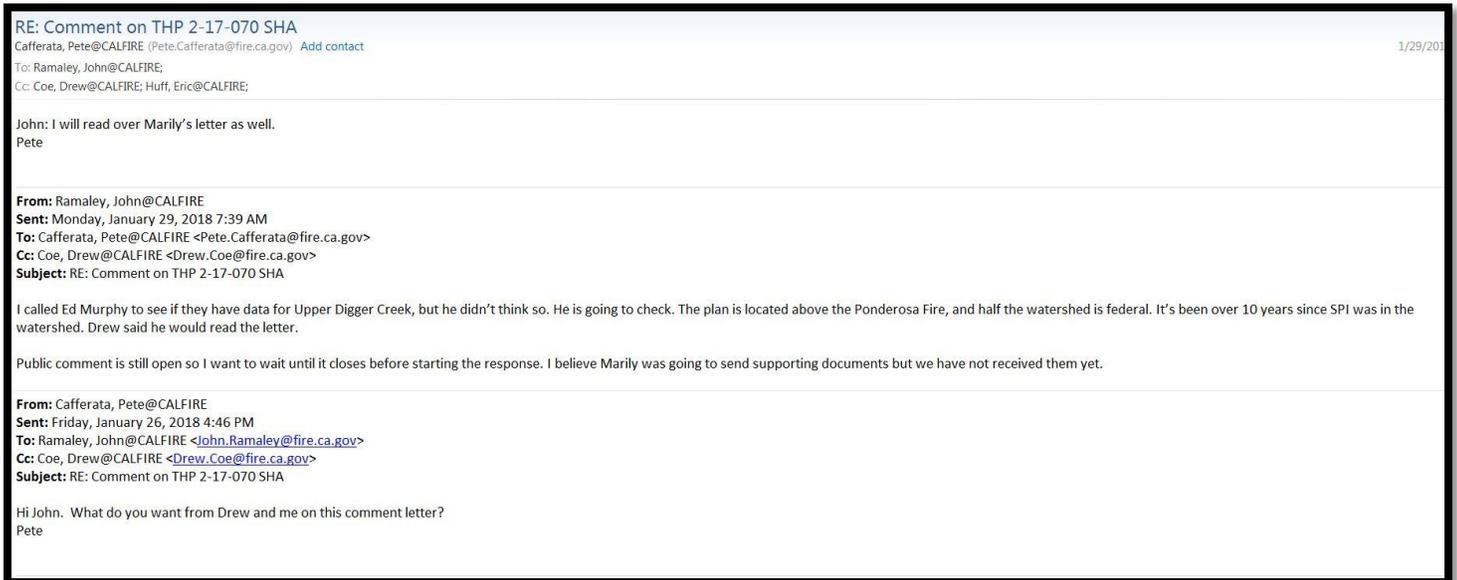
ensure that greenhouse gas emissions related to forestry operations are reduced, or that capture and sequestration of carbon dioxide is maintained, enhanced, or increased.

In regards to a 2017 report being used in California, Dr. Dominick DellaSala, of the Geos Institute, recently wrote a letter to the Oregon Department of Forestry (ODF) regarding the development of Oregon's carbon policy framework. **(Attachment DellaSala 2018)** He wrote: "I am also offering suggestions to improve upon the shortcomings of the AB 1504 forest carbon report for California (Christensen et al. 2017) which in places, did not comport with the scientific literature, rendering sections of that report questionable for referencing to the ODF report... Christensen et al. 2017 provide useful information on forest carbon accounting using comparable FIA datasets for California. However, by my account, the report makes 19 unsupported assertions that should be avoided in the ODF report..." Dr. DellaSala goes on to outline the 19 assertions, drawing attention to the many unsubstantiated assertions, the lack of carbon life cycle analyses, the statements based on conjecture, and findings that are contradicted in literature in the Christensen report. That report was also used for much of the basis of California's May 2018 Forest Carbon Action Team (FCAT) report, which has the same flaws, and others, Dr. DellaSala wrote of.

### **Public Record Act documents to provide additional evidence**

One core principle of the THP review process is that the Timber Harvest Review Team must judge evidence in an impartial and unbiased manner. However, we have received various emails from PRA requests that demonstrate predispositions and preconceived opinions on the part of the regulatory staff that may prevent the impartial evaluation of facts which is required.

Figure 14 is a January 29th, 2018 email between CF employees John Ramaley (Forest Practice Manager) and Pete Cafferata, copied to Drew Coe and Eric Huff (Staff Chief Forest Practice Program). Mr. Ramaley states he called SPI's Ed Murphy to ask for data for Digger Creek. We had submitted data about Digger Creek on January 23rd, 2018 in our initial comment a few days before the date of the email, so this would appear to suggest that the Timber Harvest Review Team is asking the regulated party to provide evidence to try to refute our data. The Timber Harvest Review Team has never contacted us to provide evidence to refute SPI's documents; indeed, they continue to allow reference to SPI documents we have sent professional reviews of, that detail the SPI document flaws. This demonstrates a prejudice in favor of the timber industry.



**Figure 14. CF Review Team emails.**

The email in Figure 14 also reveals that CF employees Pete Cafferata and Drew Coe are involved in reading our present comments. We learned from PRA emails in the past that these staff members have exhibited biased and prejudicial conduct towards our work when our research paper by Lewis et al. was in the publication process. To summarize:

Scientific journals request that the author provide some suggestions for potential reviewers. Mr. Lewis suggested Pete Cafferata of CF as one reviewer. BCA questioned this choice because Mr. Cafferata is an employee of the lead agency which has made the decisions for decades to allow intensive clearcutting to occur in California watersheds. Mr. Lewis informed us that he believed Mr. Cafferata would give a “fair review”.

We obtained the following sequence of events and information from a PRA request:

--Between 3/30 and 4/4/16 Mr. Cafferata agreed to review the manuscript.

--5/5/16 Mr. Cafferata sent another CF employee, Drew Coe, the manuscript.

--5/21/16 After 2 months, the Journal editor sent a reminder that the review hadn't been received.

--5/31/16 Mr. Coe sent his review to Mr. Cafferata and said:

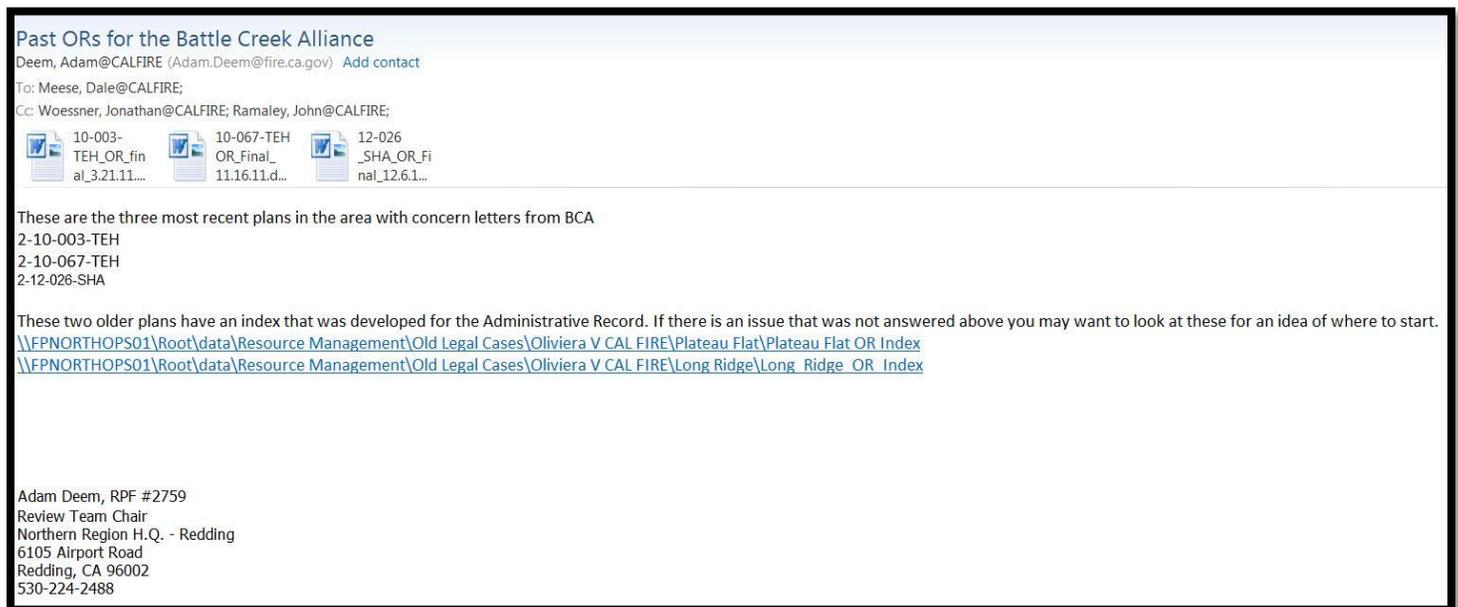
“Here's my review. I only tackled general comments, although I think they are substantive enough to reject the paper. I didn't feel the need to offer specific comments, as many them are influenced by the general comments. Note that I put a sentence in the overview talking about the paper being an advocacy piece rather than an objective analysis. You can remove that, or include it in the confidential comments to the editor if you feel it's necessary.”

Note Mr. Coe's verbiage that showed his goal was to have the paper rejected, and their plan to send “confidential” comments to the editor.

--6/1/16 Mr. Cafferata responds to Mr. Coe: "I did put the key piece I pulled out about advocating limits on harvesting rates in the confidential language to the editor." (**Attachment Coe Caff review email**)

Mr. Cafferata's and Mr. Coe's actions contributed to the long length of time (two years) it took to get our research paper published. In his review, Mr. Coe referenced several of SPI's documents. (**Attachment Coe review**) Some of those are the same documents used in this THP. We have submitted professional reviews to CF regarding the flaws in these documents since 2011. Based on this experience, we do not believe that Mr. Cafferata or Mr. Coe are capable of providing an impartial and fair review of our comments on this THP, or in general.

Figure 15 is an email between members of the Timber Harvest Review Team on February 2nd, 2018, before the close of the Public Comment period. It demonstrates an intent to use 7 year old Official Responses (ORs) for the OR for this THP. The ORs listed in the email were circulated about comments we wrote regarding other THPs in 2010, 2011, and 2012. Our comments for this THP are based on evidence collected in the years after that. CF's intent appears to be to produce an irrelevant cut and pasted Official Response again with no meaningful, reasonable analysis or thought out response to our concerns and evidence. This email also exhibits a predisposition to decide the matter in a certain way, rather than impartially weighing the facts before making the decision. Does this fulfill CF's regulatory, legal, and ethical requirements to act to protect the public good? We think not.



**Figure 15. CalFire Review Team email from 2/2/18, before the close of the Public Comment deadline, which exhibits a planned decision made before weighing the evidence we presented.**

## **In conclusion**

The Artemis THP is another THP in a long line where SPI has consistently shown a years-long pattern of submitting documents to CF which are found to have significant flaws by independent reviewers. The SPI documents contain significant omissions and concealments of the facts needed to make informed decisions.

The close of the public comment period for the recirculation of this THP is listed as August 22nd, 2018. CF's THP Library has added a Review Team letter dated August 10th, 2018 recommending approval of this THP. Once again, as in the initial comment period, the CF team is recommending approval of this THP before receiving and reviewing public comments and evidence. This signifies blatant disregard for the process and the rules that inform it. It is a deliberately biased decision made without due consideration of evidence, and a decision which ignores facts and logic. It is also evidence of a prejudicial abuse of discretion by the regulatory agency tasked with protecting the public good.

None of the documents recirculated with the Artemis THP hold up under intelligent, reasoned, and logical scrutiny.

Rather than upholding the laws and values codified by the State (such as AB 32, AB 1504, PRC 21000, PRC 21001) the CalFire Timber Harvest Review Team is acting against them by pre-approving the Artemis THP.

Sincerely,



Marily Woodhouse, Battle Creek Alliance & Defiance Canyon Raptor Rescue



Justin Augustine, Center for Biological Diversity



Susan Robinson, Ebbetts Pass Forest Watch



Rob DiPerna, Environmental Protection Information Center (EPIC)

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Zald and Dunn. 2018. "Severe fire weather and intensive forest management increase fire severity in a multi-ownership landscape". *Ecological Applications*.

### **Previously submitted attachments**

Bradley. 2018. Excel sheet of THPs in Battle Creek watershed.

CalFire Logging Data 1997-2016.

CDEC Rainfall inches at SHI station, 2003-2017 by Water Year

"Clearcut Nation" documentary made by BCA regarding the Battle Creek watershed, supplied on a flashdrive

CSPA. 2011. "Assessment of Battle Creek Monitoring Data".

Ellison et al. 2017. "Trees, forests and water: Cool insights for a hot world". *Global Environmental Change*.

Haddad et al. 2015. "Habitat fragmentation and its lasting impact on Earth's ecosystems". *Applied Ecology*.

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Lookout THP 2-06-173 TEH, Section IV Cumulative Impacts (hard copy pages)

Lewis. 2014. "An Analysis of Turbidity in Relation to Timber Harvesting in the Battle Creek Watershed, northern California".

Lewis. 2016. "An Analysis of Water Temperature and the Influences of Wildfire and Salvage Logging in the Battle Creek Watershed, northern California".

Lewis et al. 2016 (draft). "Turbidity Responses from Timber Harvesting, Wildfire, and Post-Fire Logging in the Battle Creek Watershed, Northern California".

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