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Dr. Kevin O'Hara
University of California
207 Mulford Hall
Berkeley, CA 94720

Re: Bohemian Grove NTMP 1-06NTMP-011 SON

Dear Dr. O'Hara:

I write concerning your letter of April 4, 2008, regarding the Bohemian Grove nonindustrial timber management plan (NTMP).

First, a little about myself: I am a former member of the Bohemian Club and I have been active in analyzing and critiquing the Club's proposed NTMP. I am vice-chair of the California Tahoe Conservancy Board, where we are frequently faced with complex forest management issues. I also manage my own redwood timberland in Mendocino County.

As background, I enclose a letter with attachments that I wrote to Jay Mancini, the Club's president. The letter summarizes scientific criticism of the plan and sets forth the public's concerns. The attachments comprise the original criticism, namely letters from a number of scientists, including Drs. Don Erman, Philip Rundel, Reginald Barrett, Mark Finney, Mr. Greg Giusti as well as a lengthy analysis by the Department of Fish and Game.¹ It was my hope that once Mr. Mancini and the Club understood the basis of our concerns, they would be willing to discuss the matter. Despite my invitation to meet and talk, neither Mr. Mancini nor any other representative of the Club ever responded.

Your Letter of April 4, 2008, to Cal-Fire

Your letter has become the Bohemian Club's "Exhibit No. 1," in its efforts to persuade the public that the NTMP will be good for the environment. At the same time, it has engendered considerable confusion among those of us familiar with the NTMP. Although you sent your letter to Cal-Fire and referenced the official NTMP, the letter does not appear to be based on that NTMP. Not only can your observations not be squared with the data in the NTMP, they are at variance with your scientific colleagues who have reviewed and criticized it. While disagreement among scientists is common and healthy, you appear to be addressing a different NTMP altogether.

This is what I think happened. The NTMP was criticized on numerous grounds, including failure to achieve sustained yield, the reduction of large trees over time, the adverse effects on wildlife, and the analysis of fire risk in coastal mixed conifer forests. As a result, the plan's administrative review came to a standstill and Mr. Kent was forced to revise it. Though we don't have access to the revised document, I suspect that, among other things, Mr. Kent has changed the rate of harvest to achieve sustained yield, backed off from his claim that the Grove is at risk of catastrophic crown fire, and the bizarre claim that the pre-1900 old growth forest was comprised mainly of smaller, younger trees in the RD3M and RD4M classes.

It appears that you were asked to comment on a revised plan that has been distributed only to a select few. The end result is that the Bohemian Club is advertising your letter at the same time it withholds the plan on which it is based. To date, neither CAL-FIRE nor the public has seen nor has access to the plan that you commend. In the interest of scientific openness, I would appreciate a copy of it.

Below I compare your observations with the official NTMP. I think you will agree that the two are difficult if not impossible to reconcile.

Tanoaks

In your letter, you describe a "severe" fire threat caused largely by tanoaks succumbing to sudden oak death: "Tanoaks of all sizes are being killed by this pathogen and the dead trees are providing a large input of fuels in the Bohemian Grove and surrounding properties. As a result, the fire hazards in the Bohemian Grove are severe." (p. 1.) To combat this threat, you point out that the NTMP prescribes "removal of sudden oak death-infected or dead tanoak." (p. 2.) In short, you take the position that dead and dying tanoak are a fire threat and that the NTMP requires their removal. I would agree with you about the fire threat of dead tanoak but this is not what the official NTMP says.

To the contrary, Mr. Kent asserts that live tanoaks are the greater fire risk. He therefore prescribes killing live tanoaks with herbicide, letting their leaves drop, and leaving the dead tree.

Treated tanoaks cause a short-term fuel loading problem, but after the leaves fall off, the fine fuels deteriorate very rapidly. The limbs and trunks will also rot and deteriorate quite rapidly once they come into contact with the ground. This dead tanoak material re-enters the soil humus within 10-12 years. Live dense tanoak stands may be more of fire hazard than treated stands as live tanoak stands have very dense crowns, high leaf surface area, highly flammable leaf foils, and can trap fire heat under the canopy causing heat to build up, leading to very hot, destructive fires.

(NTMP, p. 139.2.)

Thus, the NTMP does not call for the “removal” of dead and dying tanoak; it calls for increasing their number. Dr. Erman² criticized the NTMP for augmenting already abundant ground fuels, thereby increasing the very fire risk it purports to reduce. (Attach. F, p. 2.)³

Sustained Yield

You state that “[p]rojected harvest levels are well below anticipated growth for the property.” (p. 2.) But this is not true if you are referring to the current NTMP. As Dr. Philip Rundel⁴ and Mr. Gregg Giusti first observed, the NTMP fails to achieve sustained yield by a large margin because of an elementary error: Even though the vast amount of timber in the 107-acre old-growth redwood grove is off limits to cutting, Mr. Kent included it in the total volume of merchantable timber, resulting in a rate of extraction of 1.1 M to 1.8 M bf per year that would decimate the forest. (Attach. A [Dr. Rundel letter]; Attach. B, pg. 1.)

What prompted Dr. Rundel to look at the numbers was the fact that the Club’s original forester, Ed Tunheim, recommended a harvest rate of 500,000 bf per year, less than one-half to one-third that recommended by the current NTMP, even though he generally agreed with the NTMP’s volume of timber and rate of growth. (Attach. A, p. 1.) Mr. Tunheim, it should be noted, resigned when the Club decided to more than double the logging rate.⁵

In October 2007, after the NTMP’s unsustainable rate of logging became apparent, the public complained to Cal-Fire, pointing out that had the agency discovered the error in a timely fashion it would not have allowed the plan to be filed. (Attach. B.)

It may be that the NTMP you reviewed is not “a plan for large scale timber removal,” as your letter states (p. 2), but the official NTMP—which proposes a rate of harvest in excess of growth—surely is.

Promoting the Development of Larger Trees and Restoring a Pre-1900 Stand Structure

You write that the NTMP “indicate[s] an approach to keep stand density at a moderate level and promote the development of large trees.” (p. 2.) Along the same lines, you say that the NTMP will achieve “the stated objective in the NTMP of restoring a pre-1900 stand structure.” (p. 2.) If this is what the plan you reviewed will accomplish it represents a profound shift away from the one on file.

The Department of Fish and Game (DFG) was very critical of the NTMP for proposing removal of stands of larger, older trees with dense canopies. (Attach. C.) DFG demonstrated that in year 2006 a large portion of the Grove is comprised of stands of two strata types, namely larger redwood and Douglas fir trees (24-32 inches dbh) with a dense (60-80 percent) canopy cover, known as the RD4D type; and larger redwood and Douglas fir trees (24-32 inches dbh) with a medium (40-60 percent) canopy cover, known as the RD4M type. By the end of the 100-year plan, both types will have dramatically declined. There will be no RD4D stands left except in very narrow strips acting as buffers along streams. And there will be

significantly less RD4M than there was in 2006 and 2046. The area will be comprised mostly of smaller trees (16-24 inches dbh) with a medium canopy cover, the RD3M type: “Overall, the cumulative effects of the 100-year harvesting plan show a significant net reduction in the density and number of large trees.” (Attach. C, p. 7.)

In his March 21, 2007, response to DFG (Attach. D), Mr. Kent conceded that DFG’s description of the changes to the Grove was accurate: “The assertion on page 7, paragraph 4 that significant changes to the NTMP forest stand structure will likely occur is accurate....” (Attach. D, p. 14.) Mr. Kent rejected DFG’s concerns, however, contending that the plan’s effects will be positive. (Attach. D, p. 14.) Much of his rationale for removing stands with larger trees and a dense canopy appears based on his beliefs about the original conditions of the forest. According to Mr. Kent, the original forest was mainly comprised of RD3M or RD4M, that is, smaller trees (16 to 24 inches) with a moderate dense canopy cover (40 to 60 percent); and trees 24-32 inches dbh with a moderate dense canopy cover (40 to 60 percent), respectively. (Attach. D, p. 6.)

A number of scientists and experts have been extremely critical of this description of the original forest and his claim that the NTMP will recreate it. As Dr. Reginald Barrett stated:

I am not aware of any scientific evidence that supports this description of the historic redwood forest. The best evidence we have of the Bohemian Grove’s historic and original condition is the 107-acre old-growth redwood grove situated in the center of the NTMP’s western half. The old-growth grove is described as “Late Seral Mature Forest.” [Citation.] Its strata type is RD5D, that is, very large, old trees (> 32 inches dbh) with a dense canopy cover. Since the 107-acre old-growth grove is living piece of the historic forest, it is logical to assume that the original forest resembled it, and not that described by the RPF.

(Attach. E, p. 4.)

As you may know, Dr. Barrett was involved in the development and testing of the California Wildlife Habitat Relationships System. He further points out that under that system old-growth redwoods are typically classified as RD6, with even larger trees than the Grove’s RD5D, and have been so classified by CAL-FIRE and DFG for decades. (Attach. E, p. 6.) Not surprisingly, Dr. Barrett concluded that the NTMP would retard rather than foster the development of old-growth conditions. (Attach. E, 5.) He also agreed with DFG that the plan would harm wildlife and that its mitigations were inadequate. (Attach. E, pp. 3-6.)

Dr. Erman described the NTMP’s vision of old-growth redwood forests as a “myth” with “little basis in science”:

The basis for supporting this new condition is the claim that the redwood forests of the North Coast were formerly composed of widely spaced trees, open canopy,

multiage, non-old trees (and presumably a clean understory). Such a picture is surely the condition that will prevail under the proposed plan, but it has little basis in science as the natural condition. The description of this early condition sounds quite similar to the myths used to claim the Sierra Nevada forests looked the same way before intensive logging.

(Attach. F.)

Fire, Stand Openings, and Ground Fuels

The current NTMP warns of catastrophic crown fire and recommends the creation of openings and heavy thinning of the largest trees. At the same time it proposes no treatment for ground fuels; in fact, it increases them. Both the assessment of fire risk and its treatment or lack thereof garnered considerable criticism from the scientific community.

We asked Dr. Mark Finney⁶ to evaluate the NTMP's claims that the Grove's dense canopy poses a threat of catastrophic wildfire and that thinning the canopy would reduce such a threat. In a letter to Cal-Fire dated October 22, 2007, he rejected both propositions. Indeed, he concluded that removal of the Grove's larger trees was precisely the wrong prescription. Dr. Finney first observed that crown fire is "quite rare in redwood, even under extreme weather conditions," and that logging often increases fire hazard:

Logging tends to remove the largest and most valuable trees, exposing the ground surface to sunlight and winds, and allows the rapid growth of residual trees and existing shrubs and sprouting vegetation. From a fire standpoint, this vegetation so close to the ground can increase fire spread rate and intensity – both common measures of hazard. Remaining trees are susceptible to injury or death since they are smaller in diameter and shorter.

(Attach. G, p. 2.)

He criticized the plan for its failure to assess fire risk or tie its logging rationale to such risk:

[T]here seems to be a discrepancy between the details of the written plan and the intention of this forest management activity to mitigate fuel hazard. Why was no analysis presented on the current fuel hazard situation or on any changes in fire behavior that are expected from the treatments? A great deal of information is presented on the expected volume of wood to be removed, suggesting to me that this plan is little more than a strategy for extracting commercially valuable products from the forests. Even if the logging could possibly lead to some reduction in hazard, I can find no evidence of an analysis capable of supporting this conclusion.

(Attach. G, p. 2.) He also concluded that the plan's prescription for removing the largest trees was completely wrong: Since they are the most fire resistant, they should be retained, not cut:

Since the foliage of the largest trees is held high above flames and heat generated from a fire burning on the ground surface, it is the least susceptible to ignition and would be of least concern for manipulation in a fuel treatment. Certainly, given our understanding that large redwoods and Douglas-fir trees are the most resistant and resilient to fire damage, *any legitimate fuel management prescription would specify retaining these trees.*

(Attach. G, p. 3, italics added.) He also explained how he would deal with fire hazard in the Grove: "These treatments will generally consist of surface fuel removal (often by burning), removal of shrubs, and possibly trees with foliage that is low enough to ignite from a surface fire." (Attach. G, p. 3.)

In forming his opinion, Dr. Finney relied in part on the fire critique of another NTMP. In 2004, the San Jose Water Company submitted an NTMP for its redwood forest in the Upper Los Gatos Creek watershed in the Santa Cruz mountains. Like the NTMP here, it proposed to thin the canopy to avoid crown wildfire. Three fire experts, Dr. Scott Stephens, Dr. Philip Omi, and Mr. Richard Montague were asked to critique the fire assessment and its prescription for reducing the threat of crown wildfire.⁷ All three concluded that the thinning likely would exacerbate fire hazard:⁸ Notably, Dr. Stephens relied on Dr. Finney's expertise in evaluating the San Jose Water Company NTMP. (Stephens, *Review of Fire Hazard Assessment Section of San Jose Water Company NTMP*, pp. 1-2.)

In forming his opinion, Dr. Finney reviewed the Stephens, Omi and Montague critiques of the San Jose Water Company NTMP. He pointed out that his conclusions regarding the Bohemian Grove NTMP are substantially the same as theirs regarding the Water Company NTMP. (Attach. G, p. 1.)

It is difficult to determine whether the NTMP you reviewed will be susceptible to the same criticism, but it appears that it may be. For example, you do not mention any treatment of ground fuels other than slash removal after logging operations. Removing future slash does not address the ground fuel problem that already exists and that Dr. Finney said should be the primary focus of a fire-risk-reduction strategy. You also indicate that the NTMP prescribes the creation of openings for redwood renewal. While this is a worthy goal, such openings tend to increase fire threat, according to all the scientists we have consulted. Your letter also states that the fire threat will be addressed by reducing tree density. Yet thinning, particularly thinning that opens the crown, also can increase fire threat.

You conclude your letter with high praise for the NTMP. While I respect your admiration, I'm concerned about the context in which it is expressed, because it obscures the plan's troubled history. The NTMP was filed more than two years ago. Since then it has been

revised on numerous occasions, and based on your letter appears to have been substantially revised again. These revisions have resulted from the vigilance and work of the public and a number of scientists. The Club did not change its sustained yield numbers until they were exposed as unsustainable. It did not give up its prescription for removal of the oldest, largest trees (assuming it has given it up) until its characterization of the pre-settlement forest was challenged. It did not give up its prediction of catastrophic crown fire in coastal mixed conifer forests (assuming it has given it up) until Dr. Finney and others weighed in. In short, the plan you laud would appear to be a far cry from what the Club and its RPF wanted.

The NTMP has generated an important debate about sound forestry, old growth restoration, sustained yield, treatment of fire hazard, and more. The credit goes to the public and concerned scientists. Your letter gives credit to the Club and Mr. Kent, the parties who most resisted the apparent changes you compliment.

Leaving that aside, I appreciate your involvement and concern for the Grove. It would be my pleasure to meet you and discuss these matters further. I get down to the Bay Area often and would be delighted to come to Berkeley and meet for lunch. I'd like to give you a call when I return from vacation the second week of July.

And thank you for your consideration of this letter.

Very truly yours,

John C. Hooper

(Footnotes)

¹ In discussing your letter, I will occasionally crib from my letter to Mr. Mancini and cite to its attachments.

² Dr. Erman, Professor Emeritus, University of California, Davis, was the Science Team Leader for the Sierra Nevada Ecosystem Project that reported to Congress. As part of that project, he and others wrote extensively on forest fire and its management.

³ "Attach." refers to the attachments to my letter to Jay Mancini.

⁴ Dr. Rundel is a Distinguished Professor of Biology, Department of Ecology, University of California (UCLA).

⁵ In a September 2, 2006, article by Tim Reiterman, the Los Angeles Times reported:

That same year, the club's bid to dramatically increase logging prompted the departure of the club's former forester, Edward Tunheim, who said that heavier cutting may backfire by encouraging the growth of brushy foliage. [¶]

"You open the canopy, so you get more brush ... and tan oaks and redwoods are going to sprout," said Tunheim, who was the forester from 1993 until 2000. Echoing the national debate, Tunheim said the club's latest plan overemphasizes fire danger in managing the forest.

⁶ Dr. Finney is an expert in the fire ecology of redwood forests, and currently a Research Forester with the U.S. Forest Service, Rocky Mountain Research Station, in the Fire Behavior Project at the Fire Sciences Laboratory in Missoula Montana.

⁷ Dr. Scott Stephens is an Associate Professor of Fire Sciences at the University of California, Berkeley. Dr. Philip Omi is Professor Emeritus in Forest Fire Science at Colorado State University. Richard Montague is a wildland fire manager and consultant.

⁸ Their reports can be accessed online at www.mountainresource.org/nail/fire. Echoing the national debate, Tunheim said the club's latest plan overemphasizes fire danger in managing the forest.

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