

September 15, 2007

Ms. Leslie Markham  
California Department of Forestry and Fire Protection  
135 Ridgeway Ave.  
Santa Rosa, CA 95401

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

Dear Ms. Markham:

I write this letter regarding the above-referenced nonindustrial timber management plan (plan or NTMP).

I am the Goertz Distinguished Professor of Wildlife Management in the Department of Environmental Science, Policy and Management, College of Natural Resources, University of California, Berkeley. I am a Certified Wildlife Biologist by The Wildlife Society, the professional organization for wildlife biologists.

My primary areas of research are (1) the response of terrestrial vertebrates to forest and range management practices; (2) the ecology and management of introduced species; and (3) the autecology of economically or politically important wildlife, including, martens, fishers, pumas, coyotes, and spotted owls. Topics of interest include land use planning, landscape ecology, and conservation biology and vertebrate population ecology as they relate to the problem of predicting the responses of wildlife to human activities, especially on forest and rangelands.

I have been involved with the development and testing of the California Wildlife Habitat Relationships (CWHR) System and represented the University on the California Interagency Wildlife Task Group from 1980-2000. Results of this work are now being used by the forest industry and state resource agencies in producing environmental review documents.

Recent or current research projects include (1) the response of wildlife to thinning and prescribed burning in the Sierra Nevada, (2) the population ecology of fishers in the southern Sierra, (3) the wildlife communities of golf courses, (4) the comparative population dynamics of two tule elk populations, and (5) testing comprehensive wildlife survey methods for adaptive management of wildlands.

I should also disclose that as a result of my major professor, A.S. Leopold, being a member of The Bohemian Club, and my father being an associate member, I had the opportunity to visit the Bohemian Grove on a number of occasions. I am

therefore familiar with the area in question. I also took my forestry courses at Humboldt State University in the redwood region as an undergraduate. I have been an associate member of the Society of American Foresters since 1972, and have followed forestry issues since then.

I have attached my curriculum vitae and list of publications.

In preparing this letter I reviewed the following:

1. Portions of the Bohemian Grove NTMP;
2. Department of Fish and Game's (DFG) December 1, 2006, Focused Preharvest Inspection Report (Doc.1);
3. Mr. Nick Kent's March 21, 2007, "Response to CDFG and NCRWQCB 2nd PHI recommendations" (Doc. 2);
4. DFG's April 19, 2007, memo to CDF's Ron Pape re "DFG recommendations/concerns for Bohemia (sic) Grove NTMP" (Doc. 3);
5. Mr. Nick Kent's May 21, 2007, letter re "Plan changes and response to CDFG recommendations" (Doc. 4);
6. DFG's May 24, 2007, "Response to Modifications of the Bohemian Grove Non-Industrial Management Plan 1-06NTMP-011 SON, Smith Creek and Dutch Bill Creek, Russian River Watershed, Sonoma County" (Doc. 5).

DFG concluded that the NTMP could adversely affect a number of wildlife species, because it will substantially reduce the stands of larger, older trees with dense canopies. The registered professional forester (RPF) in turn rejected DFG's position and a number of its proposed mitigations, contending that the plan would benefit wildlife, and that the mitigations already in place were adequate.

I agree with DFG's concerns about the plan's impacts on wildlife, and I do not believe that those impacts have been mitigated. In this letter, I will summarize DFG's position with which I agree, and I will then comment on the RPF's rationale for rejecting it.

At the outset, it is important to summarize the plan's effect on the forest structure of the Bohemian Grove, an issue on which DFG and the RPF agreed. In its preharvest inspection report, DFG demonstrated that over the 100-year plan period the NTMP will substantially reduce the number and density of larger, older trees.

For purposes of illustration, DFG used section 9 of the NTMP, which comprises almost one-third of the entire grove and includes the largest contiguous stand of trees greater than 24 inches dbh. (Doc. 1, p. 7.) DFG pointed out that in year 2006 more than half of section 9 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:

For example, the forested area of stands that include large (24-32 inches dbh) dense (60-80 percent canopy cover) redwood and Douglas-fir trees (i.e., RD4D) is projected to decline dramatically in the near future (year 2026). RD4D will increase slightly by year 2086, but then decline again towards the end of the life of the NTMP. Overall, the cumulative effects of the 100-year harvesting plan show a significant net reduction in the density and number of large trees.

(Doc. 1, p. 7.) Besides a dramatic decline in larger, denser stands, DFG further noted that “stands become highly fragmented and exhibit a high degree of a edge” (Doc. 1, p. 7), because the only RD4D stands left are narrow strips along streams. (Doc. 1, pp. 8-9.)

In its March 21, 2007, response to DFG (Doc. 2), the RPF 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....” (Doc. 2, p. 14.)

DFG concluded that unless mitigated the plan could have significant adverse impacts on wildlife. Larger, older trees provide important habitat elements for wildlife, such as decay, hollows, cavities, large limbs and large defective and/or damaged limbs. Because such trees will “decline dramatically” over the 100-year plan, wildlife populations dependent on stands with older, larger and denser trees are likely to suffer. (Doc. 1, pp. 8-9.) In addition, as DFG observed, the remaining RD4D forest is found only in very narrow bands along streams. This high perimeter to core area ratio can have several adverse impacts. It degrades the “intrinsic characteristics of the remaining older forest stands,” and it favors common generalist species at the expense of those species that depend on conditions of the forest interior, especially dense older stands. (Doc. 1, p. 9.) Moreover, as DFG noted, forest interior species tend to be sensitive species

because of low or declining populations. (Doc. 3, p. 2.) In short, DFG concluded that the conversion of much of the Bohemian Grove from older, larger, dense-canopy conifer stands to younger, smaller, more widely spaced ones could adversely impact wildlife. It therefore recommended a suite of mitigations to reduce those impacts. (Doc. 1, pp. 9, 12-13.)

While the RPF agreed with DFG's description of the future forest, he rejected DFG's concerns, contending that the plan's effects will be positive both environmentally and silviculturally. (Doc. 2, p. 14.) Much of the RPF's rationale for aggressively harvesting stands with larger trees and a dense canopy is based on his beliefs about the original conditions of the forest. According to the RPF, 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. (Doc. 5, p. 6.)

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 uncut 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" (Doc. 5, attached p. 151), and "late successional Forest Stand." (Doc. 2, p. 8.) 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 a living piece of the historic forest, it is logical to assume that the original forest resembled it, and not that described by the RPF. I agree with Professor Ermans's criticism of the RPF's description of the historic old-growth forest:

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.

(Prof. Don Erman's April 25, 2007, letter re NTMP 1-06NTMP-011SON.)

Although the NTMP states that it will return the forest to its original condition, in fact it creates a much younger forest in which smaller and more widely spaced trees predominate. This is hardly the prescription for creating a late seral, late succession, or old-growth forest. In fact, it retards the achievement of such

conditions. As DFG correctly observed, if the NTMP, “is designed to return the plan area’s forest to natural conditions,” it “should address the development of contiguous patches of late-seral coniferous forest, instead of simply retaining widely scattered large old and old-growth trees over the 2470-acre NTMP area.” (Doc. 3, p. 3.)

I also note that the RPF’s “description” of the historic forest contradicts his recognition elsewhere of the importance of late succession forests for wildlife. For example, in several places the RPF concedes that mature, denser forests are important habitat for wildlife and that the plan will retain some in three areas: (1) the 107-acre old-growth redwood grove; (2) the WLPZ’s; and (3) the Upper Bull Barn Mature Forest Management Area, comprising 20 acres:

- “Habitat for interior forest dwelling species will be provided throughout the NTMP area in particular in the WLPZ forests, the Upper Bull Barn Mature Forest Management Area and the Main Grove.” (Doc. 5, p. 6.)
- “These WLPZ’s are located throughout the property, and due to these high canopy retention standards, which will be met by retaining existing mature second growth, will maintain corridors of late successional habitat well spaced across the property as the majority of the larger trees must be retained during each harvest entry.” (Doc. 5, p. 3.)
- Trees with old growth characteristics will be grown in the future on the NTMP in the WLPZs (237+ acres), and two WLPZ’s have expanded widths and a requirement to retain additional large trees near the watercourse in the Bull Barn and Cathedral Trees watersheds which will provide additional mature forest characteristics over time throughout the NTMP. (Doc. 5, attached p. 151.)

Here, the RPF describes a late succession forest as comprised of larger, mature trees with a denser canopy and concedes its benefits for wildlife. Yet the original forest *was* a late succession forest. The RPF’s description of a late succession forest therefore contradicts his description of the original forest as relatively small trees with a moderate canopy.

Finally, I point out that the California Wildlife Habitat Relationships (CWHR) System classifies old-growth redwood forest as RD6, a stand condition with even older and larger trees than RD5D. This classification was established by the California Interagency Wildlife Task Group under a Memorandum of

Understanding (MOU) in 1980 by all federal and state agencies with responsibilities for wildlife in California. Thus it has been standard practice for agencies, including CDF and CDFG to label old-growth redwood forest as RD6 for decades.

In my opinion, the WLPZ's, the 107-acre old growth grove, and the 20-acre Bull Barn Mature Forest Management Area are not adequate to protect wildlife that prefer larger trees and a denser canopy. As DFG points out, the WLPZ's comprise only 10 percent of the plan and because of their narrow and elongated configuration have a high degree of the edge, making them less suitable as habitat. (Doc. 3, pp. 1-2; Doc. 5, p. 2.) The 107-acre grove is also a small portion of the overall forest (approx. 2,500 acres), and as DFG notes is in a highly disturbed and altered portion of the NTMP area as a result of human activity," and thus has limited value to wildlife. (Doc. 1, p. 6.) At 20 acres, the Bull Barn Management Area is far too small to provide habitat for interior forest dwelling species.

Nor do I agree that leaving several wildlife trees per acre, and 8 trees (18-23 inches dbh) or 4 trees (> 24 inches dbh) in the group selection openings, as the plan proposes (Doc. 4, pp. 7-8) will compensate for the substantial decline in stands of older, larger and denser trees. These measures can not mitigate for the wide-scale elimination of the RD4D strata type over the life the plan.

In my opinion, the NTMP's removal of most of the older, larger and denser stands will have a deleterious effect on wildlife, and the proposed mitigations are not adequate to compensate for the loss of this forest type. Finally, the RPF's justification for the plan's harvesting regime—that it will return the forest to something more like its original (old growth) condition—is erroneous.

I would be happy to discuss these matters further with anyone at any time.

Sincerely,

Reginald H. Barrett