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Dr. J. Keith Gilless, Chairman
State Board of Forestry and Fire Protection
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Re: Board Regulations ~Working Forest Management Plan

Dear Chairman Gilless and Respective Board Members:

As a former member of the State Board of Forestry and Fire Protection and a former Director of the California Department of Forestry and Fire Protection I write to you regarding the Working Forest Management Plan (WFMP) regulations that the Board recently approved. I recognize that my comments are provided after the close of the public comment. I do not believe that unevenaged management and sustained yield will be achieved by the WFMP regulations. I hope that the concerns that I raise below move the Board to look at the fundamental premise of the Z'Berg- Nejedly Forest Practice Act to ensure that it is compiled with in each WFMP.

I. An Effective Program of Timberland Management

As you know the Z'Berg-Nejedly Forest Practice Act defines the intent of the Act as follows (emphasis added):

> **4513. Intent of Legislature.** It is the intent of the Legislature to create and maintain an effective and comprehensive system of regulation and use of all timberlands so as to assure that:
>
> **(a)** Where feasible, the productivity of timberlands is restored, enhanced, and maintained.
>
> **(b)** The goal of maximum sustained production of high-quality timber products is achieved while giving consideration to values relating to sequestration of carbon dioxide, recreation, watershed, wildlife, range and forage, fisheries, regional economic vitality, employment, and aesthetic enjoyment.

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The central pillar of the *Forest Practice Act* is to achieve **maximum sustained production of high-quality timber products.** In order to have an effective program of timberland management, the Rules adopted by the Board must effectuate this intent and be clear and unambiguous to all stake-holders.

II. Significant Forest Management Variables Excluded from the WFMP

Core variables absent from the WFMP include providing assessments for the following:

- existing **age class distributions**,
- existing **species composition**,
- existing **size class distributions**,
- existing **stocking levels**, and
- existing **volume per acre** levels,

~ all in the context of what defines a **management unit**[1].

In the absence of this information, evaluating the baseline conditions, evaluating subsequent implementation as well as performance, and more significantly enforcement of the WFMP is made problematic since the baseline conditions are not required to be documented to allow an adequate comprehension and evaluation of the proposed management plan. Again, the forest stand characteristics that these attributes represent are vital elements for "Nonindustrial Timber Management Plans" (NTMPs) and for that matter any management plan, but yet the Board, without providing any discussion for its rationale, apparently decided that they were not a necessary condition for inclusion in the WFMP program.

The Department has written the Board at least twice and has verbally requested that these provisions be in to the regulations to ensure that the intent of the legislation could be met and enforced. More telling, the Department also requested additional standards that should be incorporated that they determined was necessary due to on-going problems confronted during implementation of the NTMP program.

I elaborate here on two of these variables – age class distributions and species composition. All of the variables noted above relate to baseline conditions. These same variables are absent in the WFMP regulations for disclosure at any future point in time including when the balance between growth and harvest is projected to be achieved.

A. Designing a Plan based on Uneven-aged Management

Before any assessment of sustained yield can be made one must first address how the array of timber stands within the confines of an assessment area such as a WFMP will be managed. This necessitates an evaluation of current timber stand characteristics for each forest site to determine what is necessary for the mix of conditions that would optimize productivity for the level of management intensity that is

[1] **Management unit** means "a geographically identifiable area delineated for silviculture or management purposes. A management unit is intended to reflect an area scheduled for harvest under the plan in any given year, but may also be designated to address specific resource sensitivities." PRC § 4597.1(c).

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planned by the forester and landowner. Only after addressing this phase can you move forward toward assessing the sustained yield capacity for the assessment area.

I believe it necessary to re-visit what "**uneven-aged management**" means:

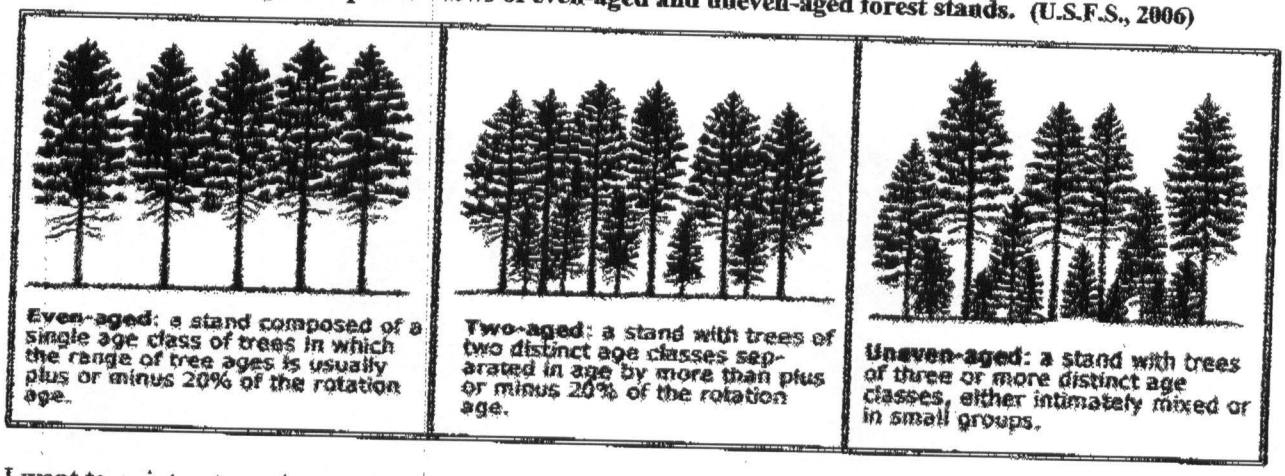
> "forest management with the goal of establishing a well-stocked stand of various age classes, which permits the periodic harvest of individual or small groups of trees to achieve sustained yield objectives of the working forest management plan, and provide for regeneration of trees and maintenance of age class structure." PRC § 4597.1(g) (emphasis added).

For further clarification and consistent with professional forestry standards, the Board in 1991 defined "**various age classes**" as "a stand with at least three distinct layers of tree crowns (size classes)." CCR § 895.1. Unevenaged management requires the establishment and/or maintenance of a multi-aged, balanced stand structure, promotion of growth on leave trees throughout a broad range of diameter classes, and encouragement of natural reproduction. CCR § 913.2 [933.2, 953.2], **Regeneration Methods Used in Unevenaged Management.**

B. Assessment for Age Class; Existing and Sustainable Distributions

The most critical element about current timber stand characteristics that was deleted from earlier versions of the WFMP involves an evaluation for current "age classes". **Figure 1** represents three different age class structures where the left and center images portray an even-aged forest stand composed of one and two age classes, respectively. The right image reflects an uneven-aged forest stand that by professional standards and Board rules must be composed of at least three distinct age classes, as represented by crown size classes.

Figure 1. Three separate profile views of even-aged and uneven-aged forest stands. (U.S.F.S., 2006)



I want to point out two important comments concerning uneven-aged management regulations that the Board documented in their 1994 discussion related to age class and uneven-aged management:

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- "Consistent with the rules related to unevenage management, the Board intends the Department to look comprehensively at unevenaged systems during the review of plans. These rules require that the Department must consider that a diversity of age classes exist, *if it is appropriate to take a stand to minimum stocking standards*, and if adequate regeneration is being accomplished by the silvicultural method."

- "Consistent with its rules, the Board intends that the Department question the RPF on how regeneration will be accomplished if it does not appear there are provisions for adequate quality, quantity, size of seed trees, or methods that ensure a continual unevenaged stand as defined in the rules and common usage within the profession." "Silviculture and Sustained Yield Findings". March 2, 1994. Board Rule Making Files (emphasis added).

The structure of the age class distribution is significant in order to manage a forest for sustained yield. As we know, most of the forest stands in California are typically expressed in an even-aged condition; to convert to an uneven-aged, balanced condition would take a number of decades—following proper management practices and forestry techniques based on science.

In summary, in order to manage a forest stand for sustained yield, information at two points in time are required before implementation can commence. This includes information about (1) the existing age class distribution, and (2) the age class distribution that has been assessed to coincide with a balanced uneven-aged distribution. Today's computer models used to forecast forest change are parameterized to simulate uneven-aged management. There is nothing in the WFMP regulations to require the forester to identify which method is being used to regulate age class distributions, which will make monitoring silviculture success problematic.

C. Assessment for Species Composition

Species composition also has an important impact on growth and developing quantitative estimates of LTSY. On dry white fir sites, foresters will likely manage their stands to promote growth and regeneration of shade intolerant species, which are also the fire adapted species. In your typical mix conifer stand that is characteristic of the Sierra range, it is common to find stands composed of ponderosa pine, Douglas-fir, sugar pine, white fir and incense cedar. Since pine and Douglas-fir represent higher value species (lumber, fire resiliency), it is important to document species composition in order to monitoring whether over time stands are being converted to less desirable and fire prone species. Knowing what species are located within the WFMP area is critical to understand site conditions, and what species can grow, over time, within what parameters and limitations, so as to determine LTSY.

III. Sustained Yield

Making assessments for **age class** distributions and **species composition** are significant aspects in developing a long-term management plan based on a policy of sustained yield. Silvicultural prescriptions based on principles of unevenaged management must be quantitatively tested for each stand in order to assess the sustainable capacity of the WFMP.

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To develop an analysis of sustained yield, you need an understanding of age class at the baseline and at a projected balanced state. Achieving a balanced state with various age classes takes time and generally requires planning for more growth than harvest in order to achieve a balanced state which provides sustained yield.

A. Defining Maximum Sustained Production of High Quality Timber Products (MSP)

It is imperative to understand the MSP element of sustained yield. It seems that over time, and especially the last 15 years, the intent of MSP has been relegated to mean minimum stocking standards defined by the Forest Practice Rules, rather than corresponding stocking levels to higher and more productive maximum growth rates for any specific forest site. This is not what MSP was intended to accomplish. It is not legitimate to require only minimum standards for maximum productivity.

MSP requires "high quality timber products." In terms of wood quality and strength, lumber with a higher density in growth rings rates significantly higher in structural characteristics. In simplest terms density of growth rings in a common 2 by 4 piece of lumber is important in home and building construction as the number of annual growth rings per radial inch becomes important in holding nails, screws and staples tight within the wood. Under shaking/vibration stresses induced by natural events such as earthquakes, tornados and hurricanes, torqueing can cause less dense wood to torque their fasteners out much more readily than compared to lumber having a greater density of growth rings. As most people that have worked with lumber know, it is much more difficult to ensure that a nail or screw will hold when the number of growth rings a few. My personal minimal standard is 7 rings per radial inch. Less than that, such as 3-4 rings per radial inch, makes it very difficult to fasten lumber together.

When the Board of Forestry in 1994 set what remains today as the stocking standards, they wrote that the identified minimums were at levels below what was needed to maximize growth, but were at levels that they thought would prevent site (soil) degradation.

The Board further discussed that the realization of growth potential was central to any assessment of Maximum Sustained Production of High Quality Timber Products. The Board recognized this in their introductory statement for Silvicultural Objectives (CCR § 913 [933, 953]) that has remained effective since passage. It states in part the following:

> "The assessment of maximum sustained production of high quality timber products is based on:"
>
> > "(a) Regeneration methods, intermediate treatments and prescriptions described in the rules which establish standards. These methods, treatments, prescriptions, and standards shall not be utilized to permit harvesting of growing stock in a manner that will significantly delay reaching or maintaining maximum sustained production." (emphasis added).

It is clear that the Board recognized that forestlands would be managed at stocking levels well above the minimums established for unevenaged management. The minimums were established "*to ensure continued regeneration.*" The Board further wrote that "[t]he new MSP rules in effect will move landowners to increase the production of their lands" as the new rules would limit harvest levels in proportion to productivity levels.

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The WFMP regulations require only minimum stocking standards. CCR § 1094.27. The WFMP regulations regarding post-harvest stocking levels are inadequate as they are unclear and could be interpreted by foresters and landowners to allow harvesting to exceed the higher levels than the calculation upon which the LTSY is based. There is nothing to ensure that the WFMP is managed at levels that would approximate maximization of productivity. When there is a clear departure in the WFMP from the projections that produced the LTSY, the Department's only legal position stands with CCR § 1094.27. The problem is that a landowner can claim consistency with this rule so long as only the minimum stocking is satisfied, regardless of LTSY projections. Consequently, I view this rule package as equivalent to a free ticket to do whatever the landowner desires, without having to provide any obligations and commitments that are imperative to granting a permit to harvest in perpetuity. I question how this can be acceptable to the Board. The Board is required to achieve a higher level.

IV. Confidential and Proprietary Information

The enabling Legislation states under PRC § 4597.2 that the WFMP shall be prepared by a registered professional forester, and that "***it shall be*** [a] ***public record***". The Legislation goes on to define what types of information shall be disclosed in the public record to include but not limited to the following: "inventory design", "projected growth by strata", "projected timber volumes and tree sizes to be available for harvest and projected frequencies of harvest". The Legislation requires that the baseline characteristics, the target characteristics associated with the point in time that LTSY is forecast to be achieved, and the transitional steps necessary to reach the target conditions, are all deemed as part of the *public record.*

I fail to understand the Board's rationale as expressed in the "Initial Statement of Reasons" and the "Supplemental Statement of Reasons" that requirements outlined under 1094.6 Contents of WFMP (a) through (jj) could be viewed as needing protection from disclosure for consequence of *"being placed at a competitive disadvantage in the marketplace"*. Additionally, if the inventory and growth and yield information are treated as proprietary, the public is effectively cut out of the entire process including the five (5) year review (CCR § 1094.29), which is clearly counter to the intent of the Legislation.

The designation of baseline inventory, timber volumes, and related projections of growth and yield is not confidential from non-industrial landowners for the following reasons:

- Permits for WFMP's, like NTMP's, are only granted to "nonindustrial" timberland owners whom by Legislation are not primarily engaged in the manufacture of forest products;
- Since nonindustrial tree farmers do not have mills or other forestry enterprises to support, there is no presumption that public disclosure of inventory and growth projections will create a competitive disadvantage; and
- In exchange for developing a *prudent* and publically available long-term management plan based on unevenaged management and sustained yield principles where productivity (i.e. growth) is managed to more closely maximize site potential, the "nonindustrial tree farmer" receives a harvest permit that remains effective for life and can take immediate advantage in fluctuations of timber markets.

Allowing a seal of confidentiality could produce the potential to manage with two sets of books, as well as lead to expensive litigation, as illustrated by the experience with Pacific Lumber's history.

V. General Comment Pertaining Professional Competency and Board Inaction

It is my belief that valid sustained yield planning is at risk because PRC § 752, and specifically subsection "b" of the **Professional Foresters Law**, is not being enforced. This places the whole program of private timberland regulation in California in jeopardy.

It is of growing concern that there is a very wide disparity in the adequacy of harvesting plans when submitted, which appear so inadequate that competency of the RPF must be raised. What further complicates this matter is the apparent inadequacy in education and training that appears reflected across the California RPF community. The Department has abandoned their continuing education program that was developed with Cal Poly in the 1990's to provide course work to Department foresters in mensuration, silviculture and growth and yield.

Although the Department is the lead agency in review of timber harvest plans, at the end of the day *public safety* receives priority over forest practice. Staying current on forest management principles and the Forest Practice Rules is complicated enough. Add in the mix of *public safety* the training and emergency response that Department foresters are subjected to each year, along with fire seasons increasing in duration each year, and it becomes a tall order to successfully implement an effective and comprehensive system of forest regulation.

Despite ongoing issues concerning forester competency or willful disregard of applicable standards, by its inaction the Board appears willing to allow the unravelling of a system of regulation intended to secure high quality forests and timber products. Training and certification is imperative to ensure that foresters comprehend these fundamental principles of the Forest Practice Act. Department foresters should not be allowed to review NTMPs and WFMPs if they do not have a fundamental understanding of the discipline. Considering the importance to the State, the Board should adopt regulation(s) establishing a credentialing program to ensure that plans are indeed prepared and reviewed by foresters competent in the subject matter.

Conclusion

The foregoing is intended to provide a concise and clear statement to prompt the Board to act to rectify these issues, particularly in the WFMP regulations, and other inadequacies which undermine the Forest Practice Act's intent to secure MSP.

Respective to the WFMP, I summarize my concerns here:

1) **Unevenaged management** is not ensured because there is no requirement on the forester to conduct an evaluation of age class, species composition, size class distribution, stocking levels, and volume per acre levels within each forest stand that has been identified on the WFMP;
2) **Maximum sustained yield** is not ensured as there is no requirement for the forester to provide an evaluation that demonstrates how the distribution of age classes will be regulated across the WFMP assessment area over the planning horizon. Secondly, there is no requirement of the forester to conduct an analysis that determines the stocking levels that will maximize productivity (i.e. sustained periodic growth) across individual productivity classes represented by the WFMP;

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3) Even when a WFMP is approved by the Department there is no clear language that instructs the forester and landowner that implementation must be consistent with the analysis. The only rule provision that is unambiguous arises from CCR § 1094.27, which states *"The minimum acceptable stocking standards on logged areas which were acceptably stocked prior to harvest are those specified in the Coast, Northern, and Southern Forest District rules."* This is insufficient.
4) Permitting the inventory and sustainability analyses to be treated as proprietary and confidential prevents public scrutiny, and without that transparency it is very difficult for the intent of the Forest Practice Act to be fulfilled.
5) WFMPs must be prepared by foresters that are competent in this discipline.

The WFMP regulations have serious omissions and gaps that will compromise the Department's ability to enforce requirements to comply with unevenaged management and sustained yield. It is important to understand that issues of growth and yield, and long-term planning based on a policy of sustained yield are complex and not uniformly understood within the profession. Therefore any effort by the Board to address these issues needs to involve members that have a full comprehension of this discipline. The state of the profession in California is at risk and continued inaction will continue to raise more questions about its legitimacy that ultimately outside influences may find it necessary to intervene.

For the beginning of the Forest Practice Act, the development of which I was involved, I have followed the issues concerning its fundamental objective to provide increased productivity of timberlands and maximum sustained production of high quality timber products with protection of our many natural and other resources. The historical record to date is not good, as we are not achieving sustainability and properly implementing the Act. These same issues come forward now in the WFMP regulations, in that they fail to provide the necessary standards and clarity to implement these central tenets. The Board needs to recognize these defects and adopt rules that clearly effectuate the Act. I urge the Board to avoid future court action concerning these WFMP regulations, which is expensive for all.

I appreciate your attention to this very important matter.

Sincerely,

Richard Wilson

cc: Governor G. Edmund Brown,
Dr. Douglas D. Piirto, Professor Emeritus, Cal Poly San Luis Obispo
Richard Standiford, Ph.D., U.C. Berkeley
William Stewart, Ph.D., U.C. Berkeley
Dr. John Helms, Professor Emeritus, U.C. Berkeley
Forests Forever

References

Figure 1: U.S.D.A. Forest Service, Northern Research Station. Forest Management 101; A Handbook to Forest Management in the North Central Region. 54pp. http://ncrs.fs.fed.us/fmg/nfgm.

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