

Memorandum

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Date: June 21, 2006

Original signed by Carl Wilcox for

From : Robert W. Floerke, Regional Manager
Department of Fish and Game - Central Coast Region, Post Office Box 47, Yountville, California 94599

Subject: Application of the WHR Habitat Classification Model and Non-Industrial Management Plan 1-06NTMP-012 SCL

The purpose of this memo is to provide the Department of Forestry and Fire Protection (CDF) with additional information regarding the potential presence of late succession forest stands on areas covered under Non-Industrial Timber Management Plan (NTMP) 1-06NTMP-012 SCL. The Department of Fish and Game (DFG) submitted previous guidance and other information to CDF in its First Review Questions for this plan.

The NTMP contains a description of the California Wildlife Habitat Relationships (WHR) habitat classification system and its application for purposes of identifying "late succession forest stands" as defined in the Forest Practice Rules¹. The description of habitat classification in the NTMP and the methods of data analysis used in the NTMP are inconsistent with the guidance given to the registered professional forester (RPF) and with materials included in the WHR Training Manual (Garrison and others 2002). In particular, this memo addresses the determination of size classes in the WHR system. It does not address the NTMP's discussion of late succession forest stands and the density and distribution of decadent trees, snags, and coarse woody debris.

We believe that the application of the WHR habitat classification system presented in the NTMP is in error and thus does not accurately disclose the potential

¹ The Forest Practice Rules define "Late Succession Forest Stands" as "stands of dominant and predominant trees that meet the criteria of WHR class 5M, 5D, or 6 with an open, moderate or dense canopy closure classification, often with multiple canopy layers, and are at least 20 acres in size. Functional characteristics of late succession forests include large decadent trees, snags, and large down logs.

presence of late succession forest stands in the NTMP area. As previously stated in DFG's first review questions, we believe that these errors in the NTMP should have resulted in the plan being rejected for filing per 14 CCR 1037. CDF has since accepted the NTMP for filing. Therefore, DFG is submitting this memo to clarify its position and to provide additional detail that may be useful to the review team and the applicant while this plan continues through the review process.

On several occasions prior to the submission of the NTMP, DFG provided guidance to the RPF on the correct procedures for applying the WHR habitat classification system to this plan. These included a pre-consultation meeting for NTMP 1-05NTMP-022 SCL², during which DFG staff discussed the appropriate methods of applying the WHR habitat classification system and supplied written materials detailing those methods from the training manual to the RPF and CDF staff. During discussions with the RPF following the pre-consultation, the RPF stated that he did not intend to follow DFG's recommended methods of habitat assessment. During prior discussions with DFG, the RPF indicated that he did not want to identify areas of late succession forest within the NTMP because, in part, it would call public attention to this matter and he personally believes that the area in question does not merit the designation of a late succession forest stand.

During the pre-consultation, DFG scientists walked through several different stands. The entire plan area was not completely covered. Some stands appeared to have more than one distinct canopy layer. These included Douglas-fir and Douglas-fir/hardwood stands at the south end of the plan area in Unit 8; and Douglas-fir, redwood, and redwood / Douglas-fir / hardwood stands in and around Unit 1.

² 1-05NTMP-022 SCL was similar in scope and activities to NTMP 1-06NTMP-012 SCL, but was withdrawn by the RPF.

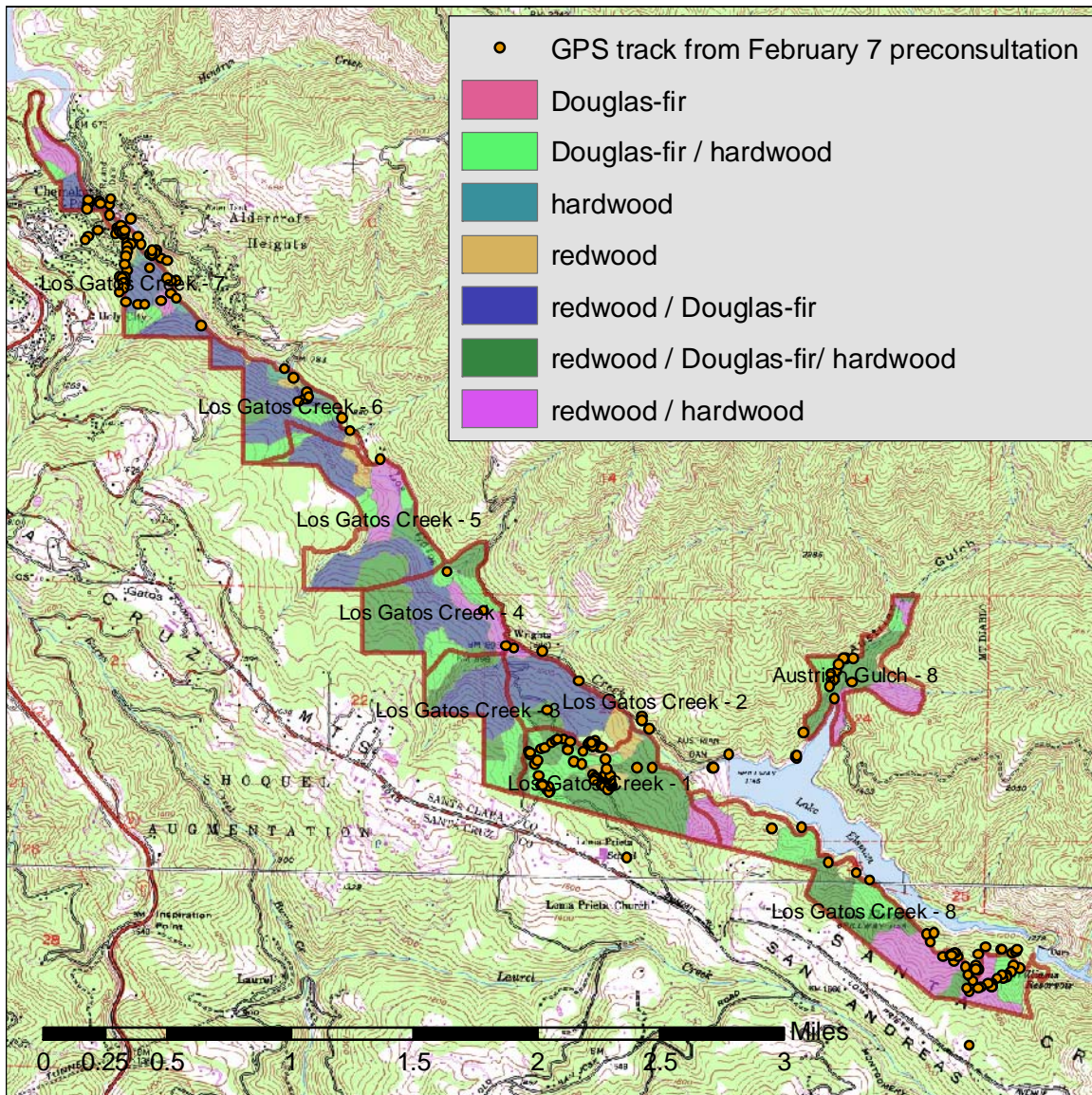


Figure 1. Portion of NTMP area and areas visited during February 7th, 2006 preconsultation.

The NTMP cites the WHR Training Manual several times to describe the assessment of size (diameter) class of the dominant vegetation. However, as the manual describes elsewhere, WHR is designed for even-structure, even-sized, or even-aged habitats. This presents difficulties for characterizing stands with un-even structure.

Terrestrial vegetation habitats are classified using even-structure size/cover stages, and the system classifies existing or current vegetation. (Garrison and others 2002) Because the existing CWHR habitat classification system is an even-structure, even-sized, or even-aged system, the majority of trees in even-structure stands probably will contribute to the overstory canopy. However, in uneven-structure stands with ≥ 2 canopy layers, this may present a problem. In most cases, canopy cover should be measured from those trees that contribute most to the size class determination.

In practice, these will be the larger trees which themselves contribute to the overstory. (Garrison and others 2002).

The Wooded Habitat Datasheet is included in Appendix H of the WHR Training Manual. The datasheet prompts the user to record a visual estimate of stand structure at plot centers prior to sampling. Users may characterize stands as even-structure or uneven-structure. The datasheet also includes the standards for tree size and canopy closure of the WHR system. This section defines size class 6, "multi-layered tree:"

A distinct layer of size class 5 trees over a distinct layer of size class 4 and/or 3 trees and total tree canopy of the layers $\geq 60\%$ (layers must have $\geq 10.0\%$ canopy cover and distinct height separation) (Garrison and others 2002).

The datasheet defines "uneven-structure:"

≥ 3 CWHR size classes, or if only 2 classes present, then the classes must skip an intervening class (e.g. 5 and 3 present but not 4) with distinctive height separation. Plots are even structured if they do not meet uneven-structure definition. (Garrison and others 2002).

The datasheet also includes instructions for recording species and diameters of live woody stems. For each stem measured, the user is to enter whether or not the stem is of an overstory or understory tree. The sheet instructs the user:

Overstory trees include pre-dominants and dominants, and generally co-dominants. Intermediate trees may be overstory or understory trees depending on relative crown position, while suppressed trees should always be understory trees. (Garrison and others 2002).

Appendix H of the training manual also includes a copy of a 1996 memorandum which discusses uneven-structure (multi-layered) stands. This memo recognizes that size class 6 is the only available multi-layered class in CWHR and defines uneven-structure conditions:

Even-aged Two-Storyed. Stands composed of two distinct canopy layers. For CWHR uneven-structure, there must be a size class skipped between the two layers (e.g., 4 over 2, or 5 over 3). Two relatively even canopy levels can be recognized, and the frequency distribution of trees by height and dbh classes tends to be bimodal (see requirement above for class skip). Neither canopy level is necessarily continuous or closed, but both levels tend to be uniformly distributed across the stand. Tree age within each level is similar, but average age differs significantly among levels.

Uneven-aged: Theoretically, these stands contain trees of every age on a continuum from seedlings to mature canopy trees. In practice, these stands are characterized by a broken or uneven canopy layer. Usually the largest number of trees is in the smaller diameter classes. As trees increase in diameter, their numbers diminish throughout the stand. Any stand with 3 or more structural layers has uneven-structure. (Garrison and others 2002).

The memo goes on to discuss calculating size class based on quadratic mean diameter (QMD):

*...QMD excludes saplings (dbh < 12.5 cm [4.9"]) with live crown to height ratios of \leq 40%. Furthermore, trees with a dbh \geq 12.5 cm (4.9") and ratios \leq 50% are also excluded from QMD calculation. Trees with low crown ratios are those with poor tree vigor indicative of suppressed trees that occur in the understory of wooded habitats. **The goal is to characterize average tree diameter of the stand using the dominant and/or overstory trees, which is consistent with the determination of overstory canopy cover for CWHR canopy cover determinations.** (Garrison and others 2002, emphasis added).*

Appendix H also includes a 1995 memorandum which discusses WHR size class 6. This memo discusses the need to stratify canopy closure measurements when evaluating an uneven-structured stand and defines "distinct layer:"

A distinctive layer is a highly subjective determination, and it must be viewed from a wildlife context... from a quantitative standpoint, the "distinct" layer of Class 5, 4, and/or 3 trees must provide at least 10% canopy cover each, so long as total canopy cover exceeds 60%. (Garrison and others 2002)

The manual describes the importance of adequate field work:

At a minimum, field work should be done at a level that ensures accurate determination of CWHR habitat type and stage and occurrence of habitat elements. Any CWHR analyses done without this minimum level of effort are deficient. (Garrison and others 2002).

As stated above, the preceding information and the need to collect additional field data were conveyed to the RPF on a number of occasions during and after the February 7 pre-consultation. However, the NTMP dismisses the potential presence of uneven-structure stands without quantitative support and omits the guidance provided by DFG scientists, including WHR program biologists. Instead of properly addressing the presence of uneven-structure stands, the NTMP describes size based on the quadratic mean diameter of trees sampled. The sample is not stratified by canopy position.

The NTMP describes the February 7 preconsultation, stating: "The RPF was not supplied with any professional opinion or direction other than to conduct a detailed analysis over the 1002 acre proposed project." This statement is not factual. DFG scientists were very clear that there appeared to be multi-layered stands with large-decadent trees, snags, and downed logs on portions of the project area and that the issue would best be resolved through quantitative means clearly consistent with the WHR habitat classification system.

On page 97, the NTMP describes a May 18 visit to the site made by Mr. Fitzgerald, stating that, during the field visit, Mr. Fitzgerald did not identify late succession forest stands on the plan area. On May 18, Mr. Fitzgerald visited the plan area at the invitation of the RPF. The scope of this visit was limited to possible osprey nests at two sites and examining the

potential impacts to tributary watercourses. Only a small portion of the plan area was visited. To allude, as does the NTMP, that Mr. Fitzgerald made any investigation or findings related to the presence or absence of late succession forest stands on the May 18 site visit, misrepresents the scope and objective of this site visit. Mr. Fitzgerald communicated this concern to the RPF prior to the submission of the NTMP.

We plan to provide CDF with additional recommendations following the pre-harvest inspection(s). Should you have any questions regarding this memorandum, please contact Mr. Richard Fitzgerald, Environmental Scientist, at (707) 944-5568; or Mr. Richard Macedo, Senior Environmental Scientist, at (707) 928-4369.

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Reference

Garrison BA, Parisi MD, Hunting KW, Giles TA, McNerney JT, Burg RG, Sernka KJ, Hooper SL, editors. 2002. Training Manual for the California Wildlife Habitat Relationships System. 9th ed. Sacramento.