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April 22, 2013

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Regarding Mendocino Redwood Company's HCP/NCCP/Timber Management Plan

Gentlemen:

Thank you for the opportunity to comment on Mendocino Redwood Company's HCP/NCCP. We applaud the efforts of the company to consider long term planning for the management of their forestlands in Mendocino County. Such a plan, carefully done, could be an aid in bringing a degree of assurance to the public that our forests will be returned to a state of healthy ecological functioning. We commend the time and resources expended in the effort and offer the following comments in the hope that the current plan can be amended to better fulfill that goal.

We found the plan very difficult to review. It was difficult to cross reference sections of the plan because often information or nomenclature changed from one section to another. Some of the data needed for an adequate review was missing; data sets contradicted one another. The elements of some data sets should have been comparable but were not. In part, the HCP proposal was difficult to access because there was a truncated Table of

Contents in the front of Volume 1. One had to turn to each chapter to find a detailed Table of Contents. There was no Table of Contents for Volume II .The EIS had a detailed Table of Contents but an inadequate index.

A revision of the plan to address these internal consistencies and the creation of a clear, straightforward proposal would be appreciated.

What follows immediately is a comment on hardwood management that includes an example of Review Difficulties:

Hardwood management

This reviewer attempted to understand the hardwood management proposals of the document. These are the steps – tedious to undertake and just as tedious to document – this reviewer went through in trying to understand the plan's hardwood vocabulary and how it related to proposed conservation measures and especially to the northern spotted owl, one of the covered species.

I found no listing in the EIS index for any of these words, 'hardwoods', 'oaks', 'tanoaks', 'oak woodlands', 'pathogens', 'pests', 'sudden oak death', or 'SOD'.

MRC points out a number of times the proposal to leave "1487 acres as representative sample areas for early seral hardwood stands". (9-19) A referral to HCP, Appendix B, maps 4A-C merely served to show me they were scattered about on the property but not *what* they were. I transferred some of them to the Vegetation Structure Map, 13b, and had these further questions: why the placement of an early seral hardwood stand in a designated 'non-forested' area on the NW section of Big River; why two sample areas on the Noyo and one on Big River in early successional conifer vegetation types; why one on the Garcia in a mid-successional conifer class? Not much help as to what they were.

I then checked the CWHR maps in the EIS. The scale precluded learning much more about these vegetation types, but I did find that the area in Big River is annual grassland!

I next turned to what was meant by "Retain all hardwood stands that would not naturally support conifers;" (9-25) and "Maintain true oak stands." (7-30) Are these two the same stands? How do they relate to the 288 acres of Class I hardwoods (all in the Rockport tract) dominated by native hardwoods, never harvested for conifers and that will not be harvested? (9-18) What is the relationship of any or all of these to the 1084 acres of oak woodlands that will have "limited activities"? (7-31)

I next looked at Table 3-20 (HCP 3-50). Here MRC had typed oak woodlands a natural community unto itself. Two other types of hardwoods (not named but given VegCamp codes) totaling 4005 acres were subsumed under MRC's category Broadleaved upland. I then went on to HCP Appendix P-1, where these two codes revealed themselves to be

"tanoak forest" (but now placed under the oak woodlands category) and "madrone forest."

Tanoak forest was shown to be "sensitive" so I followed it to Table P-2 where it became tanoak woodland, with no code but back under broadleaved upland. It was deemed sensitive because threatened by Sudden Oak Death (SOD).

I next turned to MRC's scheme of Class I, Class II and Class III hardwoods to see if I could fit them into the hardwood protection picture.

At HCP 9-22 the MRC states that they have designated three classes of mixed hardwoods as Class I, II and III. These total 4431 acres.

Class I is hardwood dominated, has never been harvested for conifer and totals 288 acres. These will be preserved. They are mapped at 4a-c, are all in the Rockport tract and if cross-referenced to vegetation structure maps 13a-c, are designated mixed hardwoods, structure class 3 and/or 5. (Not distinguishable to my eye.)

Class IIs, totaling 333 arces, are dominated by hardwoods and may have had conifer harvest but their restorability is unknown. They are mapped at 4a-c and if cross-referenced to maps 13a-c are also designated as mixed hardwoods, structure class 3 and/or 5. There were no Class II hardwoods in Noyo, Big River, or Albion. In Navarro Class II also corresponded, interestingly, to mixed conifer/HW.

Class IIIs, totaling 3810, are dominated by hardwoods because of past management and are conifer restorable. They are mapped at 4a-c and, if cross-referenced to maps 13 a-c, are found in mixed hardwood structure class 3 and/or 5.

The bottom line for these classes is that since they were typed by aerial photo, they may be ground-surveyed, all may be reclassified, and thus protection measures are unknown! The reviewer wonders why we were led through this exercise.

Thus far we have Class I, Class II, Class III hardwoods, mixed hardwoods, true oaks, oak woodlands, tanoak forest, tanoak woodland, madrone forest and early seral hardwood sample areas. They are not distinguished one from another. We do not know their extent, distribution, or their relationship to one another or to sensitive associated resources. We are unsure of their protection levels.

Why did MRC choose to create hardwood classes I, II and III, particularly as they don't distinguish them from mixed hardwood structure classes 3 and 5, some of which are not in classes I, II, and III? How will structure classes 3 and 5 that are not Class I, Class II, or Class III be managed? Nor are protections measures assured. Are any of these the same as tanoak forest or madrone woodland or oak woodland? Does Class III equate in the Navarro to mixed hardwoods/conifers or is this some sort of mapping error? Please explain why the early seral hardwood patch on Big River is designated annual grassland.

The reader cannot begin to evaluate what the proposal regarding hardwoods means.

It would have been useful to have put these hardwood 'types' all on one page, made clear the differences, quantified acres for each, assigned protection levels, and ---- mapped them!

Type conversion – mixed hardwood and conifer

Table 3-20 (HCP 3-50) lists another natural community type, mixed hardwood and conifer.

It is listed under broadleaved upland, 68,372 acres – and typed as hardwoods in MRC's inventory. In Appendix P-1 it corresponds to Douglas-Fir/tanoak and has received, as to its sensitivity, a 'Yes' followed by a question mark. It was not found in Appendix P-2, however. The tanoak portion of it would certainly be susceptible to SOD. This is not discussed. *Is it or is it not sensitive?*

HCP/NCCP Atlas maps 13a-c show the distribution of mixed hardwood/conifer. These 68,372 acres are designated structure classes 7-12 and are found mostly on easterly portions of the ownership.

The discussion pointed out that conifers make up less than 75% of these stands, that "Hardwoods probably made up less than 50% of most conifer stands created by natural processes;" and that these stands will be restored to conifer dominance. (HCP 3-52 & 3-53)

A look at the bar graph at EIS, Appendix A, page 17 shows that in just the first two decades of plan implementation mixed conifer/hardwoods and mixed hardwoods are reduced from over 40% of the dominant vegetation to less than 20%; in decades three and four they are reduced to less than 4%. This is reflected as well in the Table 4. *Acres Harvested by Silviculture Type* (EIS, Appendix A, page 16) that shows 60% of the silviculture methods in the first decade (and 42% in the second decade) will be in those types intended to reduce hardwoods, that is, transition, and restoration, which is defined as rehabilitation, seed-tree removal, and variable retention.

Mixed conifer-hardwood (over 68,000 acres) and mixed-hardwoods (4000 acres) as vegetation types virtually disappear. We believe that what is proposed is a type conversion whose impacts to all species that are dependent on oaks directly or indirectly for all or some part of their life history needs, cannot be predicted and may be irreversible. This includes, but is not exclusive to, impacts to Northern Spotted Owls. This vegetation type provides one of the most bio-diverse and species-rich habitats in our forests and includes acorn-bearing trees whose rich cultural importance is well known. Whether one agrees as to what a natural ratio of hardwoods to conifers was, or should be, to radically alter a natural community of 68,000 acres is an undertaking that should not be countenanced by the agencies.

The fact that herbicides are being used to kill these hardwoods adds to the potential impacts, but the fact that the hardwoods are being removed, by any means, is the point here.

This drastic alteration, particularly occurring as it does within the first two decades of the plan is risky experimentation on a scale that should not be allowed under a Natural Communities Conservation Plan (NCCP).

California Fish and Game Code, Chapter 10. Natural Community Conservation Planning Act [of 2003], Section 2820, (a)(3) states,
"The plan provides for the protection of habitat, natural communities, and species diversity on a landscape or ecosystem level through the creation and long-term management of habitat reserves or other measures that provide equivalent conservation of covered species appropriate for land, aquatic, and marine habitats within the plan area."

The Science Review Panel looked at the proposal with this result reported in the HCP:
"Upon review of an initial draft of our HCP/NCCP, a Science Panel, convened as part of the NCCP process, expressed concerns about our restoration of conifer forests: In the MRC presentation to our team, a plan for conversion of a portion of the broadleaf upland forest to conifer forest was discussed...Conversion to conifer forest could endanger some populations of sensitive species (Noss et al. 2003, 27).

MRC believes that the Science Panel did not fully understand our intended goal. Within the plan area, we are proposing (a) to attain an ecological and economical balance of conifers-to-hardwoods; (b) to leave natural oak stands unmanaged; and (c) to retain some tanoak stands as representative samples of early successional stands. Our conservation measures protect the most important hardwoods." (HCP 9-17)"

The Science Review Panel (SRP) issued their report in 2003 after reviewing Draft 1 of the HCP/NCCP. Since 2003 there have been a number of iterations of the plan – seven or eight? Our belief is that the SRP likely did understand the intent. However, if MRC indeed believed that they did not, was there any attempt to clarify the proposal and seek additional input? We think, in fact, that they were obliged to do so under the NCCP Act.

California Fish and Game Code, Chapter 10. Natural Community Conservation Planning Act [of 2003], Section 2810 (b)(5)(A) states,
"The agreement shall establish a process for the inclusion of independent scientific input to assist the department and plan participants, and to do all of the following: (A) Recommend scientifically sound conservation strategies for species and natural communities proposed to be covered by the plan."

Clearly, the SRP expressed a fundamental concern, one that went to the heart of the plan, the restoration of conifer forests. They should have been consulted further to help craft further iterations of the plan.

I quote this from the SRP report, page 27, which speaks to redwood forests as well as mixed conifer and hardwoods portions of the forest:

"Conversion of hardwood dominated areas to late-seral conifers by the hack and squirt method is not appropriate as a conservation strategy. Tanoak (as the most common and dominant hardwood) is a highly important component of the redwood forest. Its acorns make up a significant portion of the diet of birds and mammals in the North Coast region. It is thought that the mycorrhizae associated with tanoak play an important ecological function in the redwood forest (Mateo Garbelleto, SOD Reports)."

Others have expressed similar concerns.

As noted in Hunter Wildlife Forests and Forestry, 1990,

> "...the differences in the communities associated with conifer and deciduous stands should always cause one to give some second thoughts to any management plan that calls for extensive conversions of natural deciduous or mixed forest into coniferous forest."

A committee – made up of biologists, agency staff, and industry representatives, many of them local people and/or intimately familiar with the forests in question – convened at the Hopland Field Station in 1997 to consider retention guidelines for hardwoods on timberlands in Mendocino, Sonoma, Trinity and Humboldt Counties, and in introductory remarks to their report, cautioned:

"Because active removal of hardwoods is intensifying on the north coast, guidelines are increasingly necessary to assure coastal hardwood removal proceeds in an ecologically sound manner...this evaluation of management options is important because habitat recovery may be slow or reversed once a harvest plan is executed...long term economic planning is uncertain given the dramatic shifts in demand for various natural resources over time. For example, 100 years ago, tanoaks were highly valued by the tanning industry, and conifer dominated sites were converted to open rangeland for livestock grazing. History has demonstrated that to assume a particular wood product will be highly valued in another century is risky...Today soft woods have higher economic value than hardwoods...."

The plan itself points out the uncertainties related to this level of hardwood removal:

"Whether our restoration of conifer-dominated forest will result in a reduction of woodrats – the primary prey of spotted owls in northern California – is unclear." (HCP 5-10)

This continues to concern us. Mendocino Redwood Company has already converted, or attempted to do so, since 1999, approximately 78,000 acres of their lands by using herbicides to kill tanoaks and other "brushy" species. (EIS 3-453; I averaged the acreages of the 12 years in Table 3.10-2 and added 2 years average to total acreage.) Another 58,000 acres is proposed for conversion. (HCP, footnote 14, page 9-22) This will total approximately 136,000 acres.

Agencies, take note! "MRC has said they will meet with the wildlife agencies if a change in structure class exceeds +/- 20%." (HCP 13-82) Structure classes 1 through 12, i.e., mixed conifer and mixed conifer/hardwood, are slated for virtual elimination over the life of the plan. (EIS Appendix A, page 17) *The agencies and MRC need to meet now and modify this document to address the Science Panel's concerns.*

Further, we believe that yet another mandate of the NCCP – that is the principle of "rough proportionality" – has been violated, not only by the very nature of the conversion proposal itself, but also simply by proposing to carry it out within the first two decades.

The NCCP states at Section 2810 (b)(9), "Provisions to ensure that implementation of mitigation and conservation measures on a plan basis is roughly proportional in time and extent to the impact on habitat or covered species authorized under the plan. These provisions shall identify the conservation measures, including assembly of reserves where appropriate and implementation of monitoring and management activities, that will be maintained or carried out in rough proportion to the impact on habitat or covered species and the measurements that will be used to determine if this is occurring."

Sudden Oak Death

Additionally, we believe that this conversion proposal has not been fully assessed by the agencies in light of the impending accelerated spread of Sudden Oak Death.

A word search of the EIS entering the words 'sudden oak death', 'SOD', 'pathogens', and 'pests' turned up only a single reference found in public scooping comments. (EIS Appendix C, *Public Scoping Reports,* page 22, Issues likely to be addressed further in the EIS/EIR.)

We find no further discussion of SOD in the EIS.

Given what is known about the threat of SOD to tanoaks, the heavy removal of tanoaks across the MRC ownership over the past 14 years, and the proposed further killing of tanoaks by MRC, the failure of the EIS to assess the cumulative effects of herbicide uses on tanoaks and the impacts of the Phythophera pathogen to wildlife species associated with and dependent on tanoaks is an egregious omission that must be addressed.

We clipped the following from the abstract below to draw attention to both the predicted severity of increase in SOD on the north coast and the fact that most disease spread occurs via local dispersal. Since MRC's property abuts State Parks where *Phythophthora ramorum* has been found, the likelihood of infection on their lands, and indeed on many ownerships on the north coast, is very high.

"Our application of the model to Californian landscapes over a 40-year period (1990-2030), since the approximate time of pathogen introduction, revealed key parameters driving the spatial spread of disease and the magnitude of stochastic variability in epidemic outcomes. Results show that most disease spread occurs via local dispersal (<250 m) but infrequent long-distance dispersal events can substantially accelerate epidemic spread in regions with high host availability and suitable weather conditions. In the absence of extensive control, we predict a ten-fold increase in disease spread between 2010 and 2030 with most infection concentrated along the north coast between San Francisco and Oregon."

Title: Epidemiological modeling of invasion in heterogeneous landscapes: Spread of sudden oak death in California (1990-2030)
Author: Meentemeyer, R.K.; Cunniffe, N.J.; Cook, A.R.; Filipe, J.A.N.; Hunter, R.D.; Rizzo, D.M.; Gilligan, C.A.
Date: 2011
Source: Ecosphere 2(2): Article 17
Description: The spread of emerging infectious diseases (EIDs) in natural environments poses substantial risks to biodiversity and ecosystem function. As EIDs and their impacts grow, landscape- to regional-scale models of disease dynamics are increasingly needed for quantitative prediction of epidemic outcomes and design of practicable strategies for control. Here we use spatio-temporal, stochastic epidemiological modeling in combination with realistic geographical modeling to predict the spread of the sudden oak death pathogen (*Phytophthora ramorum*) through heterogeneous host populations in wildland forests, subject to fluctuating weather conditions. The model considers three stochastic processes: (1) the production of inoculum at a given site; (2) the chance that inoculum is dispersed within and among sites; and (3) the probability of infection following transmission to susceptible host vegetation. We parameterized the model using Markov chain Monte Carlo (MCMC) estimation from snapshots of local- and regional-scale data on disease spread, taking account of landscape heterogeneity and the principal scales of spread. Our application of the model to Californian landscapes over a 40-year period (19902030), since the approximate time of pathogen introduction, revealed key parameters driving the spatial spread of disease and the magnitude of stochastic variability in epidemic outcomes. Results show that most disease spread occurs via local dispersal (<250 m) but infrequent long-distance dispersal events can substantially accelerate epidemic spread in regions with high host availability and suitable weather conditions. In the absence of extensive control, we predict a ten-fold increase in disease spread between 2010 and 2030 with most infection concentrated along the north coast between San Francisco and Oregon. Long-range dispersal of inoculum to susceptible host communities in the Sierra Nevada foothills and coastal southern California leads to little secondary infection due to lower host availability and less suitable weather conditions. However, a shift to wetter and milder conditions in future years would double the amount of disease spread in California through 2030. This research illustrates how stochastic epidemiological models can be applied to realistic geographies and used to increase predictive understanding of disease dynamics in large, heterogeneous regions.

Turning back to hardwood management

The HCP points out in Section 9.3.2.2, the Conservation Measures for Hardwood Retention in General Areas. These could more correctly be called best management practices as there is no quantification. They don't quantify, for example, how many hardwood trees that are greater than 24 inches, or true oaks and madrones over 18 inches, there are across the landscape. Some estimation of these in the "mixed hardwood/conifer" type would be useful. The EIS at Table 3.5-3, page 3-225, notes there is "no estimate available" of hardwoods in either primary or secondary assessment areas, nor in the Aquatic Management Zones where retention of hardwoods is proposed.

Also, it is not clear how variable retention standards and minimum basal area retention standards (15 sqft of ba) 'crosswalk'. Does the greater of the two retention standards apply in variable retention units? Does the minimum square foot retention apply to all silviculture methods?

Although effectiveness monitoring is proposed for hardwood basal area in timber stands and for Hardwood Representative Sample Areas, there is no validation monitoring proposed for hardwoods. What this means is unclear, as validation monitoring is required for the effects of hardwood density on Northern Spotted Owls. *Why don't hardwood monitoring and owl/hardwood density validation monitoring mesh?*

Clearly, such an extensive plan to continue the killing of tanoaks with its unknown effects on a covered species should be delayed until a management plan for tanoaks is put in place, preferably a plan adopted by the state for the entire tanoak region, and one that fully considers the threat of Sudden Oak Death. Re-convening a Science Review Panel to help in this effort would be appropriate.

Hardwoods within conifer stands

3.4.4.5 Hardwoods within conifer stands
Hardwoods within conifer stands are important to the ecology of a conifer forest and its many wildlife species. They provide biological diversity, den sites for mammals, and nest sites for birds such as spotted owls and pileated woodpeckers. In fact, hardwoods are a native understory component of mixed forests of redwood and Douglas-fir. HCP 3-60

Specifically, MRC forests currently support a high density of tanoaks, woodrats, and spotted owls. Whether our restoration of conifer-dominated forest will result in a reduction of woodrats—the primary prey of spotted owls in northern California—is unclear. (5-10)

The above two statements from the plan show that similar comments apply to these stands as those we made for mixed hardwood and conifer stands. We believe that a reduction of tanoaks across these conifer stands also may result in adverse impacts as habitat is simplified. Also, unless hardwoods are quantified across the ownership, there can be no understanding of the proposed conservation measures.

Northern Spotted Owl

The manipulation of Northern Spotted Owl (NSO) habitat as proposed in this plan is also too sweeping, too problematic, too risky to be perpetrated on a listed species, still in decline, one facing multiple changes such as the threat of climate change – the effects of which we are just beginning to understand; the new threat of the barred owl invasion – the impacts of which are little known; and the continuing loss of tanoaks to Sudden Oak Death.

The two general management ideas that are proposed in regard to the NSO are (1) to maintain differing levels of protection that vary according to the productivity of an activity center, the idea being to give the greatest protection to the best producers, and then (2) to redistribute the better producers more evenly across their ownership.

To achieve these goals will necessitate a more even distribution of suitable owl habitat – nesting/roosting (N/R) and foraging- across the ownership. That means some N/R in

some areas will be reduced to foraging (or unsuitable habitat) and in other areas N/R will presumably be growing. And presumably productive owls will move into it.

* Nesting/roosting habitat is generally described as being larger, older, conifers with a more dense over-story canopy layer. These stands are also some of the more economically valuable stands on the ownership.

Overall, we are promised a net increase of ~8000 areas of N/R habitat across the ownership. Since there are about 8000 acres in the Albion, Navarro West, and Southcoast that are "over-represented" in their level of N/R, there will be a reduction of about 8000 acres over these three areas, and a 'growing' of approximately 16,000 acres in areas deficient in N/R for a net increase of the promised 8000-acre increase.

For example, while the Albion represents 7% of the potential N/R habitat (i.e., 7% of the forested acres of the ownership), the Albion currently has 15% of the actual existing N/R habitat (6604 acres). At 40 years N/R the Albion will be reduced to 10.6% of actual N/R habitat (5116 acres) and at 80 years, it will be down to its appropriate 7% (3629 acres).

See HCP Table 10-10, *Potential, Actual, and Projected Spotted Owl Habitat in the Plan Area*, page 10-39

Similar reductions are planned for Navarro West and Southcoast. Some areas, for example, the Noyo and Big River, will 'grow' additional N/R habitat and the owls will presumably move into these areas and be productive.

The declines in nesting/roosting NSO habitat in the Albion, Navarro West and Southcoast are also shown in the HCP map atlas on the respective maps showing Northern Spotted Owl Habitat at Year O, and then maps projecting habitat for year 40 and year 80 for each alternative.

Rough proportionality

We don't find anywhere in the plan that the new N/R habitat will be created and that it will be occupied by productive owls – *before* currently existing N/R habitat is "taken", as is shown it will be in Table 10-10.

The public needs to be assured that this will be the case, that 'rough proportionality' will be skewed in favor of the existing owls.

Understanding suitable NSO habitat using structure classes

MRC's proposal for management of NSO includes a host of other uncertainties, as is acknowledged. Among them is the key question as to whether we understand what nesting/roosting habitat and foraging habitat are, and what amounts and configurations and contiguities of the two are needed by a pair of owls in order for them to nest and successfully fledge young.

What does nesting/roosting habitat look like; what are its essential elements?

MRC undertook (and is presumably still undertaking) an interesting effort to validate N/R habitat. Best to quote them as follows:
"10.3.1.4.7 Validation of habitat typing
MRC validated nesting/roosting criteria using on-the-ground data collection from 2005. Appendix K (section K.3.2, *MRC methods for nest site evaluation*) has a description of the nest site study. We assumed that owl nests would only be found in nesting/roosting habitat. The data included tree type, size class, and canopy cover. MRC correlated data collected at each nest site to a structure class and habitat type in our landscape model. After categorizing the nest sites into habitat types (Table 10-13), we found that 61% of nest sites were identified as nesting habitat. We generally categorized the other nest sites as foraging habitat, and classified 7 sites as non-suitable. This analysis did not evaluate productivity relationships with structure class or nest site selection per se. However, since we classified the majority of our sites, we are confident that our nesting/roosting definitions include the most important factors for nesting/roosting habitat." (HCP 10-59)

Table 10-13 assigns the 90 nest sites to a structure class and to an NSO habitat type.

MRC found that 61% of the 90 nest sites were in habitat identified as nesting and found 39% of the nest sites were typed as foraging habitat or non-suitable habitat. However, if one classifies structure class 20 as foraging habitat as is done in the plan's other structure charts (EIS, Appendix A, Attachment A-24; HCP 10-29 through 10-31), the numbers fall to 58.88% of nest sites in N/R habitat; 33.3% in foraging habitat, and 7.7% in non-suitable habitat. It is odd then that MRC was able to conclude with confidence "that our nesting/roosting definitions include the most important factors for nesting/roosting habitat."

Of especial interest: 30 nests or 1/3 of the total were found in <u>foraging habitat</u>; 15 of these were in structure class 10, i.e., mixed conifer/hardwood, a vegetation type that is slated to be radically reduced. And 7 nests were found in <u>non-suitable habitat</u>, mixed hardwood types, also slated for reduction.

Given the spread of nest sites over this range of vegetation types and structure classes, the reader would like to know what the "most important" factors might be. *They weren't revealed in the chart and should be disclosed. Productivity rates at these sites should also be disclosed for review and comment.*

MRC's validation monitoring for the identification of N/R habitat (HCP 13-89) is testing the critically important hypothesis to their successfully achieving a more even distribution of owls across their ownership, i.e., that the structure classes correctly designate NSO N/R habitat. The adaptive management step is that MRC will meet with the agencies to discuss potential changes in typing if their verification rate is less than 60% correct. Structure classes 22, 23, and 24, in which ~ 60% of nests were found, are all typed as conifer and are designated, mid-successional (22) and advanced successional (23 and 24).

Given that the verification rate is now less than 60% - or just above it, depending on structure class 20 - we request that MRC meet with the agencies now, before plan

approval, and before (perhaps) significant N/R habitat is reduced, in order to re-assess habitat/structure class associations. In addition to the information requested above, the results of the meeting and/or any alteration or adjustment to the rules for designating structure class should be disclosed to the public for review and comment before the agencies make a decision on the HCP. This type of validation monitoring should be required, not optional.

It is no conservation plan that proposes to manipulate habitat before there is a clear understanding of what the habitat is and what the impacts of modifying it across the landscape will be.

Level Four Owls

The HCP at 10-20 and 10-21 states in regard to its Level 4 owls that there are 22, that they are off the plan area within 1000 feet, and that they are further divided into two groups, Level 4A and Level 4B, and, moreover, that the wildlife agencies reviewed and approved these categories. The reader is then referred to HCP, Appendix K, for a listing. Appendix K lists only Level 4 owls, but doesn't show the breakdown between 4A and 4B. *The reviewer needs this information to assess protection levels afforded particular owl activity centers.*

Hardwoods and dusky-footed woodrats

The relationship between hardwoods and dusky-footed woodrats underscores a key uncertainty that ties back into the need to make hardwood protections clear, quantified and mapped. This uncertainty relates to the relationship between hardwoods and the abundance and accessibility of the dusky-footed woodrat, the primary prey species of the NSO in this region.

In this regard, the HCP notes,
"Ward et al. (1998) reported that northern spotted owls may select conifer-hardwood edge sites as a possible compromise between finding abundant versus accessible dusky-footed woodrat populations." (HCP 5-10)

The HCP states,
Specifically, MRC forests currently support a high density of tanoaks, woodrats, and spotted owls. Whether our restoration of conifer-dominated forest will result in a reduction of woodrats—the primary prey of spotted owls in northern California—is unclear. (HCP 5-10)

Then the question,
What effect does herbicide applications have on woodrat populations?
Is there a direct correlation between the density of hardwoods, especially tanoaks, within spotted owl territories and the demographic parameters of spotted owls (M§13.9.1.4-6)? (HCP 5-14)

MRC, to test this hypothesis, agrees to develop a study plan *within the first 10 years* of HCP implementation. (HCP 13-92) This is not acceptable. The study should not wait until tens of thousands more acres of hardwoods have been 'converted' with the accompanying loss of woodrat habitat. There have been about 80,000 acres of tanoak

killed in the past 14 years, meaning that there are already many acres suitable for research out there. Let the study begin now. *Do not approve this plan until a study design has been created and approved by the agencies.*

Advanced Successional and Structure Class

The term "advanced successional" as found in the plan is important to our understanding of the HCP as it is a forest category that MRC claims will be increased over the life of the plan and will provide for the habitat needs of species associated with older forests, such as northern spotted owls and marbled murrelets. They have assigned their forest stands to structure classes, some of which are 'advanced succesional.'

The reviewer is curious as to how this term relates to the more commonly accepted terms for older forest such as 'late seral', 'late successional', and 'old growth.'

Advanced successional is defined as "Generally refers to relatively older forests with larger trees and higher canopy closure than commonly grown under typical forest management schemes. This EIS/PTEIR uses the term "advanced successional" in the context of the timber model and when analyzing the effects of the alternatives." (EIS Glossary, 9-9) This is a vague definition.

"Structure classes are a vegetation classification based on a stand's species composition, diameter distribution and density. Structure classes relate vegetation conditions to forest wildlife species." (EIS Glossary, 9-18)

These two terms, advanced successional and structure class, are cross-referenced in various tables throughout the HCP and the EIS, principally at EIS, Appendix L, EIS 3-329, 3-330 and 3-331 and at HCP Volume II, Appendix U, Section U-L, as well as (for structure classes) HCP/NCCP Map Atlas maps 13a through 13c.

They are also cross-referenced in the above tables to the California Wildlife Habitat Relationship (CWHR) system – though MRC claims that their structure classes, based on more site-specific and local knowledge are better predictors of potential habitat than CWHR.

The HCP states, "MRC delineates 24 distinct structural classes to categorize stand types in our uneven-aged forest. Using these structural classes, MRC has designated spotted owl habitat based on the judgment and experience of our biologists, guided always by the scientific literature (see section 5.2.5)." (HCP 3-62)

Unfortunately, this level of assurance is not supported by the exercise they undertook to validate their understanding of N/R habitat, as noted above.

On EIS pages 3-311 and 3-312 "advanced successional" is referred to as follows, "This term is not intended to *necessarily* equate to late-successional conditions, as there are *likely* fewer large trees and habitat elements (e.g., decadent trees, large snags and heavy

accumulations of large logs on the forest floor) than under *more commonly accepted* ecological definitions of late-successional."

Furthermore, charts elsewhere in the document, notably EIS Appendix L, purportedly show the relationship between advanced successional and "more commonly accepted" definitions of habitat type, e.g., California Department of Fish and Wildlife's "California Wildlife Habitat Relationship"(CWHR) classes. Here one finds that the term "advanced successional" is equated to two *different* CWHR classes, "size class 5 with moderate cover" and "size class 6", only the latter commonly accepted as late successional. However, if with advanced successional there are "likely fewer large trees and habitat elements" than late successional, it *may not equate.*

These two CWHR habitat types are *never* differentiated in the text when the term "advanced successional" is used in the EIS. Is it structure class 20 or 23 or 24? The reviewer is then not able to assess what level of ecological functioning is being referenced, especially in relation to the northern spotted owl.

Are there currently or will there be in the future, sufficient "large decadent trees, snags, and large down logs" (found at 14 CCR 895.1 Definitions; "late succession forest stands") to maintain functional late successional habitat?

Moreover, there is yet another confounding factor when one looks at the table at EIS, Appendix L from the point of view of the structure classes 20, 23, and 24. These three structure classes are further subdivided into two *different* categories, "u" and "e". When structure classes 20, 23 and 24 are referenced in the text – and they are never referenced with these letters added - we do not know which of these two categories, mid-successional or advanced successional is meant. Moreover, the letters "u" and "e" are not defined or explained in the text. The reviewer needs to know why the separation and what factors distinguish the categories. (See below in the addendum for additional comment on

The explanation for these letters needs to be added to the document so that the reviewer can understand and assess these categories for their value to wildlife.

Table L-5 in EIS Appendix L does not have the same correspondences as the table found in EIS 3-329, 3-330 and 3-331 where the structure classes 20, 23, and 24 are shown as *only* advanced successional. *These discrepancies need to be reconciled.*

Moreover, there are 3 additional structure classes created that apply only to marbled murrelet habitat modeling. These are structure classes 25, 26, 27. We are not told what characteristics distinguish these classes. Nor are we told how 20 differs from 26 (they are in the same CWHR class) or 24 from 27 (also in the same CWHR class.) Nor is the need for a size class with an open canopy for designating marbled Murrelet habitat made clear. *Please explain.*

Further, while there are many references to advanced successional throughout the document, the reader does not find that these references discriminate among the structure classes. Therefore, when one is trying to understand the timber output model tables found in Appendices O, Q and R, one doesn't know what structure class or classes is meant by Advanced Successional (20, 23, 24?) or Mid-Successional (2, 3, 4, 5, 6, 8, 10, 12, or 23u?).

We find that this new term, 'advanced successional' is not used in a clear and consistent way across the document, making review of impacts to covered species impossible.

In summary, we found the document difficult to access and review in the time allowed for public comment. We also found numerous omissions, internal inconsistencies and data gaps. We believe this document needs to be revised to address these and reopened for a public comment period of 90 days.

Our further comments pointing out deficiencies in the document are appended.

Thank you for this opportunity to comment.

Sincerely,

Linda Perkins
Sierra Club, Mendocino Group
ARWPA/FOSC

Addendum – Further Comments

Compare Table 10-10 Potential, Actual and Projected Spotted Owl Habitat in the Plan Area at HCP 10-39 and Table 10-7 Distribution of NSO Territories to meet Distribution Objectives that show *the decline*, respectively, in northern spotted owl nesting/roosting habitat (N/R) and number of Level 1 and Level 2 territories, in the Albion, Navarro West and Southcoast inventory blocks over the life of the plan (at 40 years and at 80 years).

Compare this to *the increase* in 'advanced successional' stage in EIS, Appendix Q in the same three inventory blocks over the life of the plan.

My understanding that advanced successional equates to NSO nesting/roosting habitat is based on comparing EIS, Appendix L, Table L-5 and HCP, Tables 10-7, 10-8 and 10-9 at HCP 10-29 through 10-31, as well as the definition of 'advanced successional' given at EIS 3-311.

Please explain why the two tables in the HCP show decline of N/R while the EIS Appendix Q shows an increase of advanced successional. If the correlation between NR and advanced successional is not correct, please explain. Please make these explanations and/or reconciliations of tables part of a revised document so that it is clear to the general public what the proposal intends.

Note that EIS, Appendix L, Table L-5, shows vegetation structure classes 20, 23 and 24 followed by the letters "u" and "e". What these letters mean is not explained in the document. This reviewer called Brad Valentine, California Department of Fish and Wildlife (707-527-5361) and was told that they mean "unevenaged" and "evenaged". Besides that they go unexplained in the text, these subcategories are not carried forward to any other tables of structure class.
Please add this information to the document and explain that the use of structure classes 20, 23, and 24, as for example in the vegetation structure maps at HCP Map Atlas maps a-c, may be referring to an even-aged or an uneven-aged stand condition. Even-aged and uneven-aged conditions might imply quite different habitat values. The reader needs to have this information in order to assess what is being proposed.

The HCP is unclear in its presentation of vegetation structure class on its maps 13a through 13c. One assumes that the 24 blocks in the legend are the same as the 24 structure classes in HCP 10-29 through 10-31. I tried to pencil them in on the map for my own use but was unsure I had them correctly done.
This information needs to be added to the legend.

Table 10-9, Stand Typing, HCP, pages 10-30 and 10-31.
This table has no structure class 10. That seems odd as the N/R validation exercise that MRC undertook found 15 nest sites in this structure class. There is no class 11.
Please add to table.

Table 8-3 projects AMZ canopy cover by planning watershed. "These values represent canopy cover averaged across the Class I and Large Class II AMZs. At this time, our inventory is not robust enough within the AMZs to give accurate data at the planning watershed level. Currently AMZ stands are not distinguishable from upslope stands. The data within Table 8-3 comes from a computer program which uses structure classes to model canopy." (HCP 8-6)
Please explain how the EIS appendices, for example, Appendix O and Q, showing acreages in upland, riparian, and forest-wide areas were derived if riparian areas are not distinguishable from upland slopes. The reviewer can't assess data that is "made up".

7.4.2.2 Projecting wildlife habitat and conserving natural communities

With our landscape model, MRC tracks the current status of our forests and predicts future conditions. Conditions can include not only timber volumes, but wildlife habitat. The landscape model, for example, can track and predict the development of northern spotted owl habitat over time and across MRC forests. It can also track the growth of AMZ stands, including canopy development and LWD recruitment potential, which indirectly impact covered species like the salmonids. All projections of our landscape model are based on structure classes in our inventory database. With a crosswalk that maps the names of different structure classes to the same habitat type, MRC can use other structure classes in our projections, such as the California Wildlife Habitat Relationships (CWHR). (HCP 7-11)
Please explain how this explanation of the landscape model which <u>does</u> track growth of AMZ stands is compatible with the statement just above. This statement also shows the need for a clear and consistent description and application of structure types.

Note Table 10-8 on HCP 10-29. Shows Structure Class 10 as foraging habitat. There were 15 nests found in this structure class. *Please explain. Please provide information about the habitat elements that may have led to these owls nesting in Class 10.*

The tables in EIS Appendix L don't have the same correspondences as the table found in EIS 3-329, 3-330 and 3-331 where the structure classes 20, 23, and 24 are shown as *only* advanced successional.
These discrepancies need to be reconciled.

At EIS 3-255, Table 3.5-9 "Effects on Habitat Elements within the assessment areas under the Proposed Action"; for hardwoods in both the primary and secondary assessment areas, the column for acres reads, "No estimate available."
Please collect this information and provide to the public.

At HCP 8-6, "At this time, our inventory is not robust enough within the AMZs to give accurate data at the planning watershed level. Currently, AMZ stands are not distinguishable from upslope stands. The data within Table 8-3 comes from a computer program which uses structure classes to model canopy."
Please explain how Appendix Q was constructed absent this data.

Yet at HCP 3-48, we find Table 3-19, "Acres of Hardwood and Conifer-Hardwood Stands by Major Drainage", and find for example that the Albion "major drainage" has 1408 "Total Gross Acres in AMZ" of which 48 acres are "Gross acres with Hardwood in AMZ."
Please explain, in the absence of the data as noted above, these figures were derived..

At HCP 9-19, Table 9.3.2 Goals and Objectives for Hardwoods, G9.2.3-4 is "Provide representative samples of early seral hardwood stands throughout the plan area." And at O9.3.2-7, "Designate 1487 acres as representative sample areas for early hardwood stands." (Appendix B, HCP/NCCP Atlas, Maps 4A-C.)

But at EIS, 3-353, last paragraph entitled "Hardwood stands and hardwoods within conifer stands", it is stated in two places in the paragraph that MRC will retain "representative *mid-successional* hardwood areas."

Early seral and mid-successional hardwoods represent different habitat values. Which is correct?

There is no mapping of California State Parks.

We would like to know where Parks are in relation to the primary assessment area and would like consideration given to the potential impacts of this proposal to Parks.

In looking at EIS, Appendix F, Figure F14b. Current Distribution of potentially marbled Murrelet habitat (Year 0 for all alternatives), we found it strange that there is none of this habitat in somewhat more inland locations, particularly as HCP Map Atlas map 7-b shows many potential habitat trees in, for example, the upper Albion. Also in this same area of the upper Albion, the map on EIS, 3-313, Figure 3.6-1 shows a number of advanced successional forest patches greater than 80 acres and within 1 mile of another patch. Other watersheds also have potential habitat trees mapped.
Please explain why potential murrelet habitat is not found in these Albion areas and other more inland places. And please explain the disparities between these maps. Why Murrelet habitat on one map and not the other. These make review difficult.

The map at EIS, 3-313, Figure 3.6-1 shows two linear areas in Navarro West that are advanced successional forest patches greater than 80 acres and within 1 mile of another patch. The HCP map atlas, map (not numbered) Vegetation Structure Class Plan Area South, shows these areas in Navarro West are a mixed set of structure classes by no means all advanced successional. And given that the eastern patch is entirely along a heavily traveled highway makes its functionality as advanced successional questionable. *Please make this clear for all reviewers.*

Updated information is needed for assessing potential impacts to Northern Spotted Owl. Note that the nest site evaluation done by MRC between 2001 and 2005 (see HCP, Appendix K, K-16 and HCP 10.3.1.8) contains information that is 10 years old and older. *Please provide current information regarding nest sites. Please provide the activity center numbers (for example, MD 299) for the nest sites evaluated so the public can*

assess the work done. Please also reconcile these two sets of information. One shows 79 nests studied; one shows 90 nest sites.

In Appendix Q the acres of three successional stages, early, mid-, and advanced, are given by inventory block, forestwide and then in riparian areas. The numbers for the watersheds don't add up. For example, the Albion, an inventory block of 14,786 acres, (HCP 1-18) has a total of 14,078 acres forestwide, and 1941 acres riparian. Either adding or subtracting the numbers don't add up. This is also true for Big River and other inventory blocks. Even if comparative for alternatives purposes, there must be some consistency to the information.
Please explain the discrepancies.

EIS, Chapter 2-7 states,
"The timber model does not have the capability to accurately simulate all of the specific conservation measures that would be implemented under each alternative. Simplifying assumptions were made in the model regarding the effect of these measures on timber harvest under each alternative...Because of the simplifying assumptions made, timber modeling data are used solely to compare and contrast the relative differences among alternatives to support the analysis of effects in the EIS/PTEIR (Section 3, Affected Environment and Environmental Effects). *The data are not intended to represent actual conditions."* (Emphasis added.)

It is alarming to read that so many of the assumptions of the HCP, as well as the analysis of impacts and the comparison of alternatives, are based on modeled projections that are themselves based on very limited data sets that fail to provide an adequate description of baseline conditions, and yet purport to make accurate predictions extending 80 years into the future.

Please explain to the lay public how these predictions, especially when considered along with climate change, can serve as assurance to the public that the agencies are making decisions based on reasonable assumptions.

MRC plans to increase their NSO nesting habitat to 25% of the plan area by year 75+ of the HCP. The plan area currently has 21% nesting/roosting habitat. This additional 4% is ~ 8000 acres. However, the chart on HCP 10-39 shows that they will be reducing N/R habitat where it currently exists by ~8000 acres. So MRC will actually need to create 1600 acres of N/R in order to have a net increase of ~ 8000 acres.
This increase of N/R habitat is not clearly explained as a <u>net</u> increase. Please make this clear in the document.

It would be of interest to know what percentage of the 90 nest sites (HCP 10-59) are found in, or in very close proximity, to riparian areas as the charts on EIS 3-349 show almost all of the advanced successional forest type will be found in riparian areas. One

wonders how this shift of advanced successional forest type to riparian areas will affect upland forests and habitat. Will these upland areas be reduced?
Again, please provide the ID numbers of the owl nest sites studied.

Thank you,
Linda Perkins.