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Re: MRC HCP ITP and PTEIR

Gentlemen:

In response to your request for comments, we submit the following. Although quite aware that the use of herbicides in MRC's forests is not a "covered" activity, we at the Willits Environmental Center are concerned about the immediate as well as the potential, long-term cumulative effects of these toxins on the "covered" species and the forest lands they inhabit. In our concluding remarks we address issues of the HCP/NCCP as a whole.

Please, then, accept our comments and questions and respond to our concerns.

Herbicides and the Land

- 1) Since herbicides are used to "...maximize growth of commercially valuable species..." (EIS, 3-451, 1.27) – i.e., they are apparently indispensable to timber production – why are they not considered a part of timber management and, therefore, a covered activity?
- 2) What type and quantity of herbicides were used on MRC's primary assessment area by previous owners of that property?
- 3) Have MRC forest soils been tested for residues which may remain from such "legacy" use? Why/why not?
- 4) Could such residues in any way react synergistically with currently used herbicides or their degradates, thereby increasing the likelihood or mortality and/or decreasing reproductive success of listed species? Please explain.
- 5) In the secondary assessment area, where MRC may purchase land and where listed species may travel, approximately how much and what type of herbicide is currently used? Is it used in riparian areas?

- 6) The EIS has pointed out the "...increased likelihood of direct application of herbicides to plant species of concern along roadsides to control invasive plant species, since these activities are not subject to survey requirements under CEQA." (EIS 3-463, 1.33-45). Why are they not subject to such requirements? Why has no complete floristic survey been completed on MRC lands?
- 7) What kind of site-specific mitigation measures would MRC perform to avoid "potentially significant project impacts," (EIS, 3-466, 1.22-24), previously undetected, on protected species and habitat? Please explain.
- 8) Why is the greatest amount of herbicide projected to be used during the first two decades of the HCP? (EIS, 3-462, Fig. 3.10-5)
- How much will be used to control exotic species?
 - How much for vegetation control during road construction and maintenance work?
 - How much for tanoak eradication?
- 9) How long does pre-emergent herbicide "...remain active in the immediate area of the shallow root zone"? Please define the word, shallow. (EIS 3-451, 1.38-9)
- What is its effect on soil flora and fauna, specifically on the mycorrhizal network between trees?
 - What is its effect on shallow redwood roots?
- 10) How long does post-emergent herbicide remain, particularly Imazapyr, which the EPA in 2007 found to be "...relatively mobile in the environment since it is readily transported through soil leaching and surface runoff?" (EIS 3-48, 1.26) If more recent toxicological testing has been done, what were the results?
- 11) The Basin Plan prohibits "bioaccumulation of pesticide (herbicide) concentrations in bottom sediments or aquatic life..." (EIS, 3-452, 1.14-15) but says little about forest soil accumulations which could leach into waterways. Why not?

Herbicides and the Aquatic Habitat

- 12) MRC is to be lauded for its voluntary water quality monitoring in partnership with NCRWCB. We encourage them to continue those efforts indefinitely. We also appreciate their decision to use only herbicides labeled for aquatic use in riparian buffer areas; however, we wonder why – if these herbicides are judged safe by the EPA – MRC has chosen this course of action. Please explain.

- 13) "The Environmental Protection Agency, citing research from 1991, has determined that glyphosphates... (Accord, Razor) are moderately to highly toxic to fish and moderately toxic to numerous amphibian species...(They) may affect and (are) likely to directly and adversely affect California red-legged frog (...terrestrial phase)...and indirectly and adversely affect its habitat and prey items due to the compounds' effects on vascular plants and small, terrestrial organisms." (EIS, 3-459, 1.30-36). How can use of this product be justified within a Habitat Conservation Plan area? What are its effects on the coastal tailed frog?
- 14) The same question arises with regard to the use of Triclopyr BEE, which is highly toxic to rainbow trout although, according to some researchers, "...there is little likelihood that triclopyr would leach from adjacent forest applications into water." (EIS 3-459, 1.47; 3-460, 1.3-4). Assuming that trout are adequate surrogates for salmonids, why is this product allowed anywhere near water?
- 15) NMFS' preliminary analysis of triclopyr BEE (and its more mobile and persistent degradates, triclopyr acid and TCP) found that they pose "...only a low potential to reduce reproduction, numbers, or distribution..." of Coho, Chinook or steelhead of the Northern California segment and "...would not appreciably reduce the conservation value of critical habitat for these species." (NMFS 2011, in EIS, 3-460, 1.8-16). In the same paragraph, the EIS reports EPA findings that triclopyr acid and TCP degradates "...are more persistent and mobile in the environment than triclopyr BEE ... (and) likely to be transported to surface waters." (EPA 2009, in EIS 3-460, 1.5-7)
- a. Has NMFS completed a final analysis of triclopyr BEE? If so, what were their findings?
 - b. How to they explain the disparate response of Central Coast Steelhead to this herbicide, which "...poses a medium potential to reduce population, numbers, or distribution..."? (EIS, 3-460, 1.14-16)
 - c. "Medium potential" is defined in note 46 on the same page as "...might kill fish, but not very often, would not disrupt fish life cycle functions, and would only result in minor reductions in reproduction, prey availability, primary production, or cover (NMFS 2011)." Given the low numbers of fish returning to local rivers to spawn (*), can we afford the "medium potential" for killing a few fish, "but not very often"? (*MRC biologists, Dave Ulrich and Kirk Vodopals, reported by Thom Elkjer, ANDERSON VALLEY ADVERTISER, 3-13-13)
- 16) In view of the decreasing water levels in local rivers (average rainfall down 7% since 1950; average annual cfs for the Navarro down 13 %), would not chemical concentrations increase? How might increased concentrations affect listed fish

and amphibians – particularly recently hatched fingerlings who must survive through spring, summer and increasingly dry fall before returning to sea?

- 17) Sulfometuron-methyl, used by MRC for nonselective weed control, is "...slightly toxic to fish and aquatic invertebrates...(and) exhibits low acute and chronic toxicity to aquatic animals, including rainbow trout..." (EPA 2003, cited in EIS, 3-460, 1.35-8)
 - a. What is the toxicity data for salmonids? Is trout behavior an adequate surrogate for salmon?
 - b. Why is there "...little specific information...on the potential sublethal effects of the compound? (NMFS 2003, reported in EIS, 3-460, 1.38)
 - c. What is the most recent toxicity data for amphibians?
- 18) What type and how much understory remains for forest creatures after a typical harvest? How soon after herbicide use can they safely use remaining vegetation for food and shelter?
- 19) "Welsh et al. (1998) believe that, apart from direct habitat destruction, the single greatest threat to red-legged frogs on managed forest lands may be the use of forest herbicides and pesticides that can contaminate breeding sites." (EIS, 4-55, 4.5.9.4). We are reassured that MRC does not currently use herbicides in the AMZ and hope that policy continues indefinitely. We wish to know, however, since amphibians, such as the coastal tailed frog, may winter outside the AMZ, how far beyond the AMZ does the riparian area – along with no-spray policy – extend?
- 20) Do any of the herbicides used by MRC contain estrogen-mimicking compounds which can cause developmental abnormalities in the egg and early larval stages of salmonids and amphibians?
- 21) In one of the few allusions to herbicides in their public draft, MRC states that they "...are evaluating and adjusting management practices, such as the use of herbicides, to decrease negative impacts on the environment." (HCP 12-5). What, in their view, are those negative impacts?

Imazapyr vs. Tanoaks

MRC "identified approximately 4431 acres of mixed hardwood stands..." in its initial typing of stands in 2006, yet states in footnote 14 of the same page, "We predict 58,000 acres of hardwood-dominated forest will receive variable retention silviculture." (HCP 9-22, 9.3.4.1-2). Why the discrepancy in hardwood acreage? How much imazapyr will be used to eradicate tanoaks which may form a large percentage of hardwood acreage?

Given the number of species which depend upon tanoaks and other hardwoods, living and dead, for food and shelter, we do not feel that MRC's retention standards for those trees are adequate. Since few contiguous old-growth redwoods remain on MRC land as Northern Spotted Owl habitat, more and larger tanoaks should be grown beyond the usual 20-year harvest cycle and retained, both as owl nesting sites and as forage for the dusky-footed wood rat, its principal prey.

MRC's chief forester, Michael Jani, was recently quoted as saying that "...a (yearly) average of 5,500 pounds of imazapyr..." was used to eradicate tanoaks. (Will Parrish, "The Plight of the Beautiful Tree", in the ANDERSON VALLEY ADVERTISER, 12-5-12). Although MRC plans to reduce herbicide use over time, Mr. Jani's estimate translates to a total of 72,297 gallons of triclopyr and imazapyr over the 80-year duration of the HCP. (EIS, 3-462, Fig. 3.10-5)

All this, in pursuit of a mythical vision of a more easily "managed" pre-Conquest forest: orderly stands of Douglas fir and redwoods as the mono-crop foundation, a few tanoaks scattered about, and minimal biodiversity. What will be the long-term, cumulative impacts over time to forest soils, their productivity, and the wildlife which depends upon this habitat? When should we expect the arrival of super weeds?

At least one researcher, Frederica Bowcutt, an ecologist and faculty member of Evergreen College, states that herbicide-based, variable-retention forestry models like that of MRC have little credence in current ecological thought. "The focus (now) is on how random factors shape vegetation," she told Parrish in the afore-mentioned article, and went on to describe the countless beneficial functions which tanoaks provide for all the forest's denizens.

"There are few guidelines on how many hardwood stands to retain in order to maintain the ecological value of a forest." (HCP, 9-25, 9.4.1). Why not, then, embody the Precautionary Principle in MRC's forest management, particularly regarding hardwoods, at least until more data are gathered and analyzed for the assessment area? Until then, why not employ tanoak as a sort of insurance against the unpredictable results of climate change?

- a. Why not exploit their canopy near rivers and streams to shade salmonid waters and improve microclimate within the AMZ for amphibians – at least until more marketable species produce more extensive canopy?
- b. Why not exploit their deep roots to increase bank stability, thereby decreasing erosion and stream sedimentation?
- c. Since tanoaks are naturally subject to mortality by fire, flooding and Sudden Oak Death (HCP, 14-30-31), why is imazapyr needed to hasten their demise?

The Willits Environmental Center is less concerned with the cosmetic effects of Imazapyr than with its long-term effects on the entire ecosystem. How long do tanoaks require to die completely, post-treatment in the stand?

- a. Why are they not left as downed wood in the stand to provide habitat to wildlife?
- b. If not, what is their ultimate destination?
- c. Are roots left to decompose in the soil or are they removed?
- d. What is their tested poison load above and below ground?
- e. Why, instead of “hacking and squirting” herbicides, can’t MRC forestry personnel, or perhaps seasonal labor, simply cut away a cambial band to girdle the trees they seek to eliminate?
- f. Why can’t tanoaks be utilized more extensively to enhance wildlife corridors, thereby increasing habitat connectivity and reducing edge effects?

Why does the Forest Stewardship Council allow the use of herbicides in the forests it certifies?

Concluding Remarks

MRC’s request for an 80-year take permit, bolstered by their weighty and extensive HCP/NCCP, is an impressive document. Yet it is not, we feel, quite ready for implementation, especially for so long a period and with such minimal provision for climate change. In the first place, there are many gaps in the data necessary to plan sound conservation measures for the listed species. (A partial list of data gaps so far noted is appended.) In fact, we were quite surprised in reading those chapters devoted to covered species that our own questions were nearly identical to those of MRC staff who have had nearly 15 years’ experience with the species in question.

Moreover, while MRC has devised a sophisticated adaptive management plan, many of the proposed mitigation measures require substantial agency oversight; e.g., their requests for exceptions to EEZs and ELZs in aquatic areas and wetlands. Therefore, we urge MRC to conduct far more “ground-truthing” in order to verify or modify the countless assumptions and hypotheses which characterize their HCP/NCCP. More complete data may, perhaps, allow for wiser planning with less agency involvement – a sensible goal, given the probable absence of such support in coming decades.

In evaluating the HCP/NCCP, a further objection soon became obvious: the absence of a complete description of “existing conditions” so frequently mentioned. As a result, we hope that a second Science Panel can be convened to evaluate the modifications MRC proposed in response to the panel’s remarks regarding a presumably earlier version of the HCP/NCCP than that which we have read. Once a thorough description of existing

conditions is available to the panel, we request their analysis of how those conditions may influence MRC's projections and assumptions based on older data!

Finally, we contend that ecology, rather than economics, should be the driver of MRC's proposed action to conserve both forest habitat and the species which depend upon it. Further, we would argue, most of the monitoring and validation they propose should be compulsory, not voluntary, for the duration of the project.

The endangered and threatened species which today manage to survive on MRC's lands are remnants of formerly thriving populations and represent the collateral damage of past timber wars. They demand tested and effective conservation plans which assure not only their continued existence but their increase in numbers.

Voluntary monitoring is not acceptable, particularly as climate change advances. Invoking economic constraints, in the specific case of MRC, is disingenuous at best. Their HCP/NCCP could, with conscientious, data-based planning, implementation and monitoring, become the new paradigm for conservation efforts across the country. We urge them to accept the challenge. The species cannot afford less.

Respectfully,

Marcia Rautenstrauch
Willits Environmental Center

Addendum: Missing Data

Do existing data provide adequate foundation for planning an HCP/NCCP of these dimensions and the 80-year duration which MRC requests for its take permit?

- HCP 8-76: “TSU mapping is not complete... estimates are indicative of about 70% (c. 150,000 ac.) and... probably cannot be extrapolated to remaining 30% of the plan area.”
- App G-1: The “majority of surveys (for watershed analysis) are (only) within Class I streams” although MRC “occasionally surveys Class II and Class III streams.”
- App G-1: Road inventory was incomplete, as of 2010
- App G-14: “MRC has not quantified sediment inputs from deep-seated landslides in any of the watershed analysis reports.”
- App G-15: Nor has it visited all landslides in the field. (Table G-7)
- App G-17: Non-point erosion estimates come from SEDMOD projections. Are they adequate and accurate?
- Re: Anadromous salmonid and amphibian habitat: “No data are available for 47% of streams in the primary assessment area.” (EIS, 3-126, 1.4-5)
- HCP 3-60: “MRC currently has little data on our wildlife trees.”
- HCP 8-6, 8.22: “At this time our inventory is not robust enough within AMZ stands to give accurate data at the planning watershed level.”
- No complete floristic survey has been undertaken.
- EIS 3-218: 1.34: There is “...no comprehensive wetland inventory for MRC lands.”
- EIS 3-458: “No direct acute or chronic toxicity data is available for amphibians.”
- EIS 3-463: There is “insufficient information to determine potential effects (of herbicides) on reptile or insect species of concern.”
- HCP 4-50-1: There have been no systematic surveys of Northern Red-legged Frogs in Northern California.

- HCP 4-61: “Little is known regarding Coastal-tailed Frog survival rates and longevity.”
- There is no complete description in either HCP or EIS of “existing conditions.”
- The HCP/NCCP contains no index
- TMDL temperature determinations for impaired rivers have not been completed by RWQCB; therefore, implementation plans are not available to guide MRC’s conservation planning.

