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April 14, 2004

Allen Robertson, Deputy Chief
California Department of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460

Re: Negative Declaration for THP 1-04-030SON, Hanson/Whistler Timberland Conversion Permit (TCP) #530

Dear Mr. Robertson,

I am writing in regards to Timberland Conversion Permit #530 (Hanson/Whistler) and Timber harvest Plan (THP) 1-04-030SON at the request of, and on retainer to local citizens, who are concerned about the deterioration of the Gualala River watershed. This conversion and harvest are in the Little Creek watershed, a lower tributary to Buckeye Creek. These comments bear substantial similarity to those which I filed on May 20, 2003 with your office on Timberland Conversion Application 02-506 and Timber Harvest Plan (THP) 1—01-171 SON, which was also near Annapolis on Patchet Creek, a tributary to the Wheatfield Fork Gualala (Higgins, 2003a) and in December 2003 on Timberland Conversion Application 524 and Timber Harvest Plan (THP) 1-01-223 SON (Higgins, 2003b) in the upper South Fork Gualala River basin. Please review the first of those correspondences for my qualifications to comment in this regard.

The California Department of Forestry continues to blatantly disregard any prudent, risk based management of cumulative watershed effects as recommended by Ligon et al. (1999) and Dunne et al, 2001). It also ignores a preponderance of evidence that the Gualala River is an extremely degraded water body (CSWRCB, 2001) and fails to recognize the recent National Marine Fisheries Service (2001) and California Department of Fish and Game (2002) coho status reviews. The latter points out that coho are "extirpated or nearly so" in the Gualala River basin. There are numerous false statements in THP 1-04-030SON/ TCP #530 regarding watershed condition and cumulative effects. A major problem with analysis of potential cumulative effects of this project, and ones adjacent, is that the vegetation of the area has been dramatically altered, yet there are no recorded timber harvest permit applications (see below). Once again, the analysis of impacts is fundamentally flawed because it does not focus on the scale of Buckeye Creek and the Gualala watershed as a whole. Consequently, a Negative Declaration is wholly inappropriate for THP 1-04-030SON/TCP #530 and complex unanswered questions, such as its potential impact to flows, water temperatures and fisheries, should necessitate a full Environmental Impact Statement under the California Environmental Quality Act.

Fisheries

The environmental review documents submitted by the consultants for this project ignore the regional and in-basin status of coho salmon (Oncorhynchus kisutch) and steelhead trout (Oncorhynchus mykiss). National Marine Fisheries Service (NMFS, 2001), the California Department of Fish and Game (CDFG, 2002) and Brown et al. (1994) have found that coho salmon are at risk of extinction throughout Mendocino and Sonoma County. Coho were once known to be abundant in the Gualala

River (Taylor, 1972) yet CDFG (CA RA, 2002) surveyed over 100 miles of stream in the Gualala basin and collected fish samples using electroshocking and found no coho salmon anywhere. As indicated in my previous correspondence steelhead in the Gualala River are also greatly diminished.

The acute aggradation of the Gualala River mainstem reaches has shifted the ecology of the river substantially. THP 1-04-030SON/TCP #530 mis-characterizes Buckeye Creek as having healthy conditions for salmonids and as being in recovery from past forest harvest effects. In fact conditions for fisheries are extremely poor in Buckeye Creek and advanced cumulative effects are recognized in tributary channels adjacent to or near Little Creek, such as Franchini Creek and Grasshopper Creek. If corrective actions are not taken with regard to sediment abatement and flow preservation, more of the Gualala River channel can be expected to go dry causing further impacts to the already imperiled fish community. This project will exacerbate both problems.

Temperature

Buckeye Creek is characterized in the report as suitable habitat for salmonids with few lingering cumulative watershed effects (CWE). In fact Buckeye Creeks water temperatures remain substantially over those recognized as suitable for coho salmon (Welsh et al., 2001) and in fact are in the range known to be highly stressful for steelhead (Sullivan et al., 2000). Figure 1 shows the maximum water temperature of Buckeye Creek for several years between 1994 and 2001 and values are all in the range of stressful for steelhead trout and completely unsuitable for coho salmon. Coho should be recognized as the most critical "beneficial use" associated with cold water fish under the Clean Water Act in the Gualala River and long term goals should be to return the western tributaries to coho suitability. Continuing timber harvests and conversions will have the opposite effect. Figure 2 shows that water temperatures are above suitable for coho salmon not just in Buckeye Creek but in all larger tributaries.

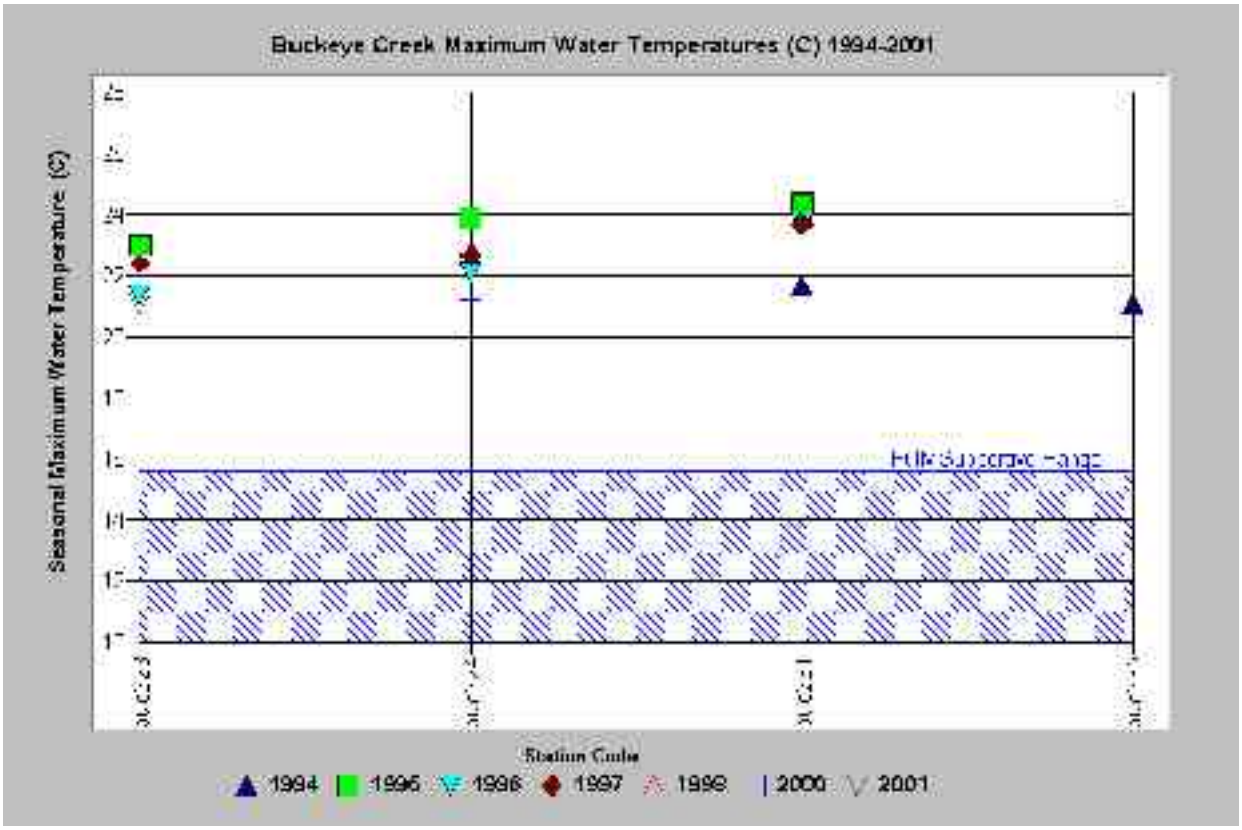

Figure 1. This chart shows the maximum water temperature for all automated temperature probes placed in the Buckeye Creek from 1994 to 2001. Data provided by Gualala Redwoods, Inc. and the Gualala River Watershed Council.

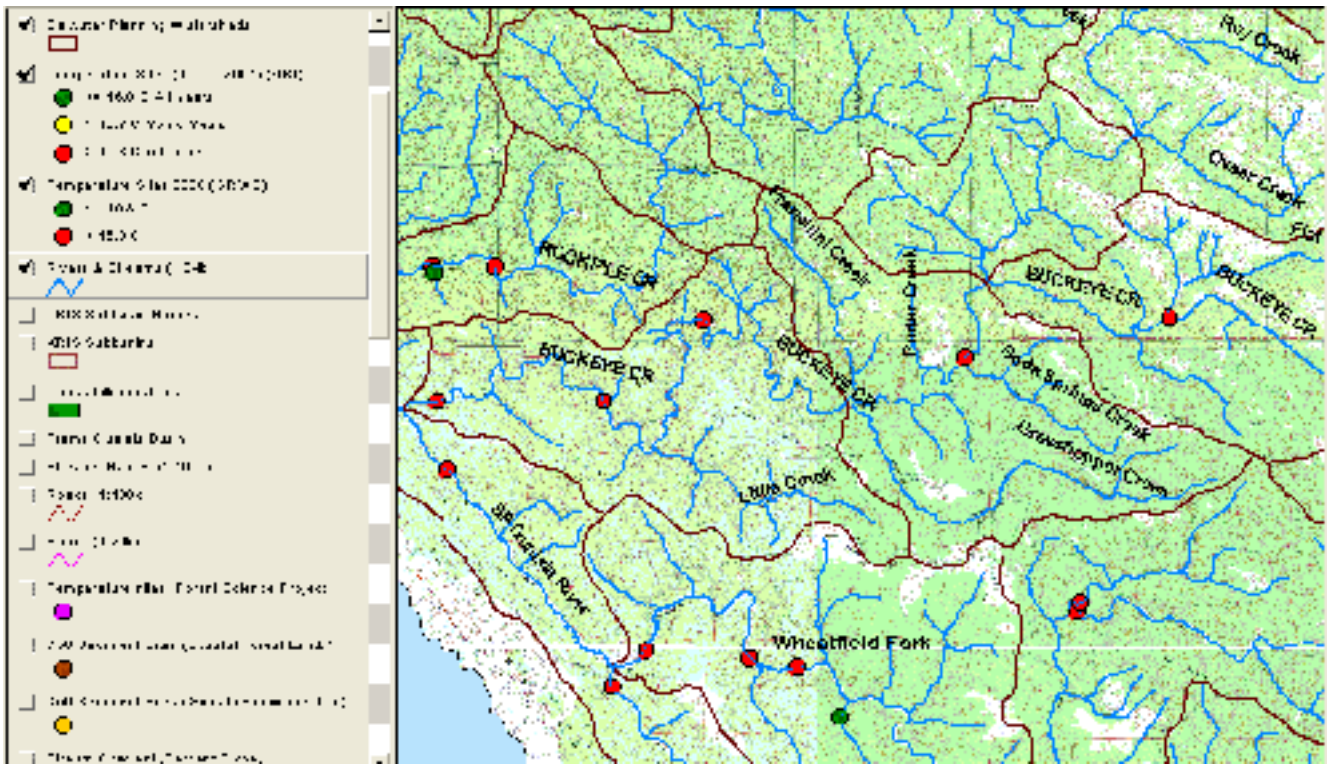

Figure 2. This map shows that water temperatures are unsuitable for coho salmon at most locations in the western Gualala River basin. Data provided by Gualala Redwoods, Inc. and the Gualala River Watershed Council.

Only small tributaries of the Gualala River have water cold enough to be optimal for salmonids and particularly coho salmon. As shown in Figure 2, minor tributaries of Rockpile Creek and the Wheatfield Fork alone have are optimal. Little Creek water temperatures may be cool and provide important salmonid refugia, but no temperature data are supplied. THP 1-04-030SON/TCP #530 must deal with the question of the importance of Little Creek to ecosystem function of Buckeye Creek and its ability to support salmonids and more genuinely with the potential impacts to water temperature of the project. The plan acknowledges that water temperatures may be increased if base flows decrease, but then fails to deal with potential effects of the project on base flows and temperatures (see below).

Sediment

Documents associated with THP 1-04-030SON/TCP #530 portray Buckeye Creek and its tributaries as being in advanced recovery from past timber harvest with regard to sediment impacts, but there is substantial information available to refute that assertion. The Gualala River watershed is listed as impaired for sediment under section 303(d) of the Federal Clean Water Act, which precipitated the *Technical Support Document for the Gualala River Watershed Water Quality Attainment Action Plan for Sediment* (CWQCB, 2001). This study found that human caused sediment delivery rates are approximately 200% above the natural background rates in the Buckeye Creek basin (Figure 3). Two tributaries of Buckeye Creek upstream of Little Creek, Franchini and Grasshopper creeks have recognized problems with sediment.

North Coast Regional Water Quality Control Board staff observed a significant amount of sediment in transport in Franchini Creek (Figure 4). The small particle size distribution and concave nature of the stream indicate very recent contributions of sediment (Dietrich et al., 1989), not advanced recovery.

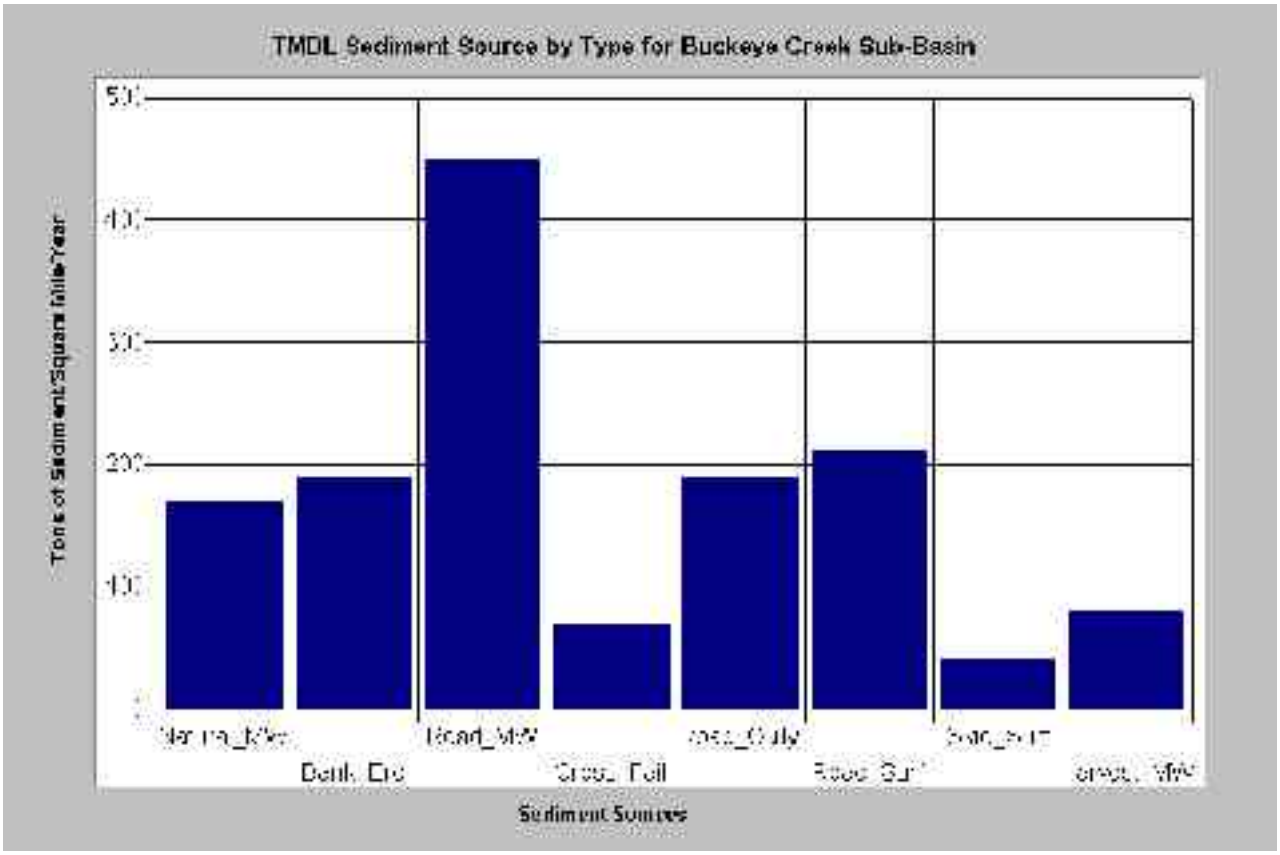

Figure 3. The Buckeye Creek basin sources of sediment estimated by the CWRCB (2001). Road sources had the highest sediment yield in combination. Estimated sediment yield is shown as tons of sediment yielded per square mile per year. From CWRCB (2001).

Figure 4. Franchini Creek and NCRWQCB staff during 2001 survey indicating major sediment problems and recent active contributions.

Knopp (1993) studied 60 north coast California watersheds and found that watersheds with high timber harvest management had compromised pool volumes as measured using the V-star method (Hilton and Lisle, 1992). Values measured in Grasshopper Creek indicated that had a V-star score of 0.59, while TMDL targets indicate that a healthy stream would have a value of less than 0.21 (CSWRB, 2001). The values in Grasshopper Creek actually ranged as high as 0.739, indicating that some pools were almost three quarters filled with sediment.

The lack of pools in the mainstem of Buckeye Creek and the infrequency of pools deeper than three feet are indicative of major cumulative watershed effects. The lack of pool depth is likely to be a major limiting factor for juvenile steelhead (Reeves, 1988) and coho salmon (Brown et al., 1994). Habitat typing data from CDFG (2001) are displayed in Figure 6 and show that pools deeper than three feet are uncommon in lower Buckeye Creek, although it is a relatively large fourth order stream. The sediment cycling from tributaries such as Franchini Creek and Grasshopper Creek are likely contributing to the compromised pool frequency and depth. The lack of proper characterization of existing sediment problems in Buckeye Creek and its tributaries make THP 1-04-030SON/TCP #530 insufficient in terms of proper CWE analysis. Figure 6 also shows the acute problems with sediment and CWE as reflected by lack of deep pools in adjacent Rockpile Creek and in the South Fork and Wheatfield Fork of the Gualala River.

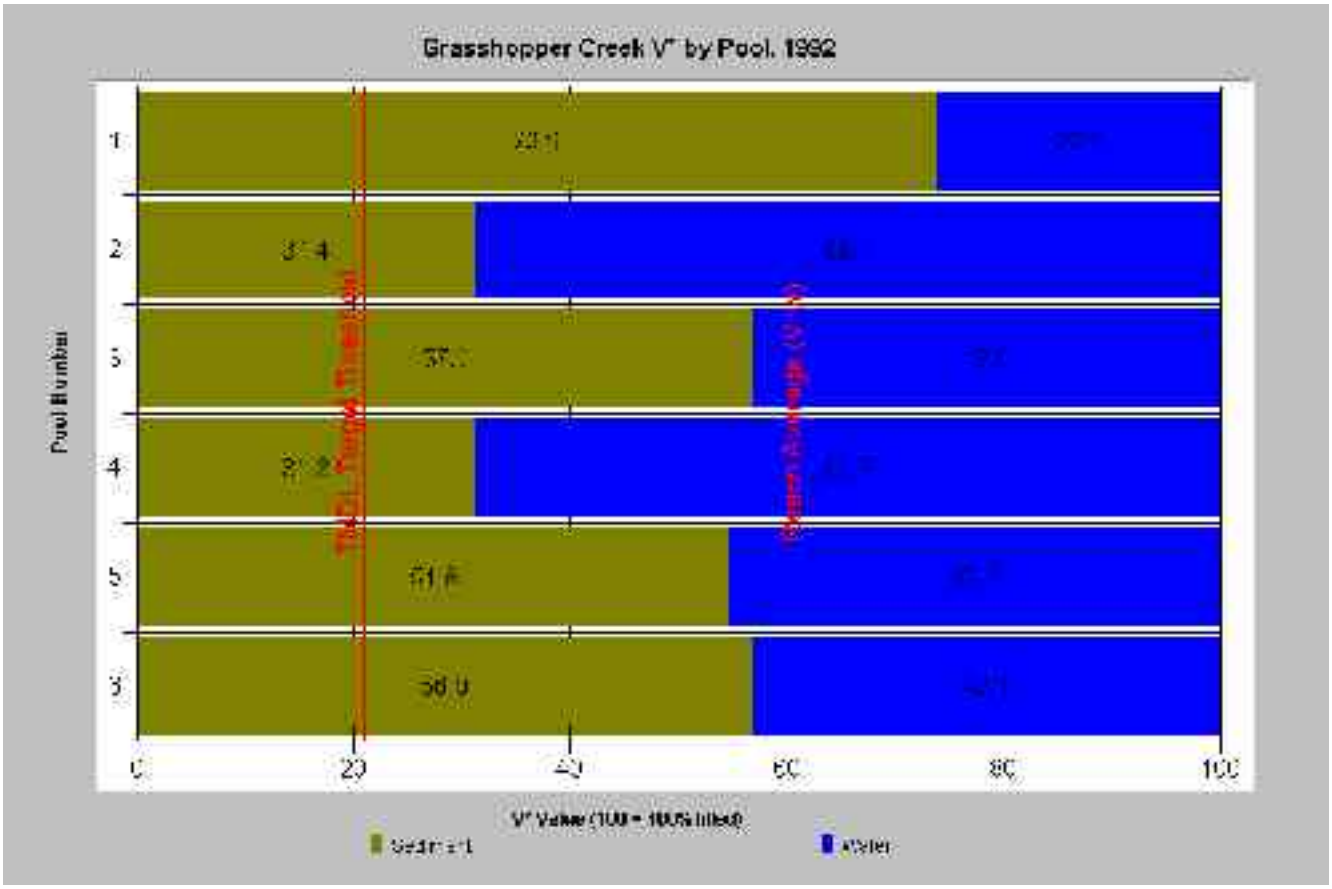

Figure 5. V-star values in Grasshopper Creek as collected by Knopp (1992) indicating major sediment problems related to recent past management in this Buckeye Creek tributary.

Roads are the most significant contributor of sediment in Buckeye Creek and basin-wide (CWQCB, 2001) and road densities in the Gualala River watershed over-all are high, including the Buckeye watershed (Figure 7). Road densities in the Little Creek Calwater Planning Watershed, which encompasses lower Buckeye Creek and all of Little Creek has some of the highest road densities in the

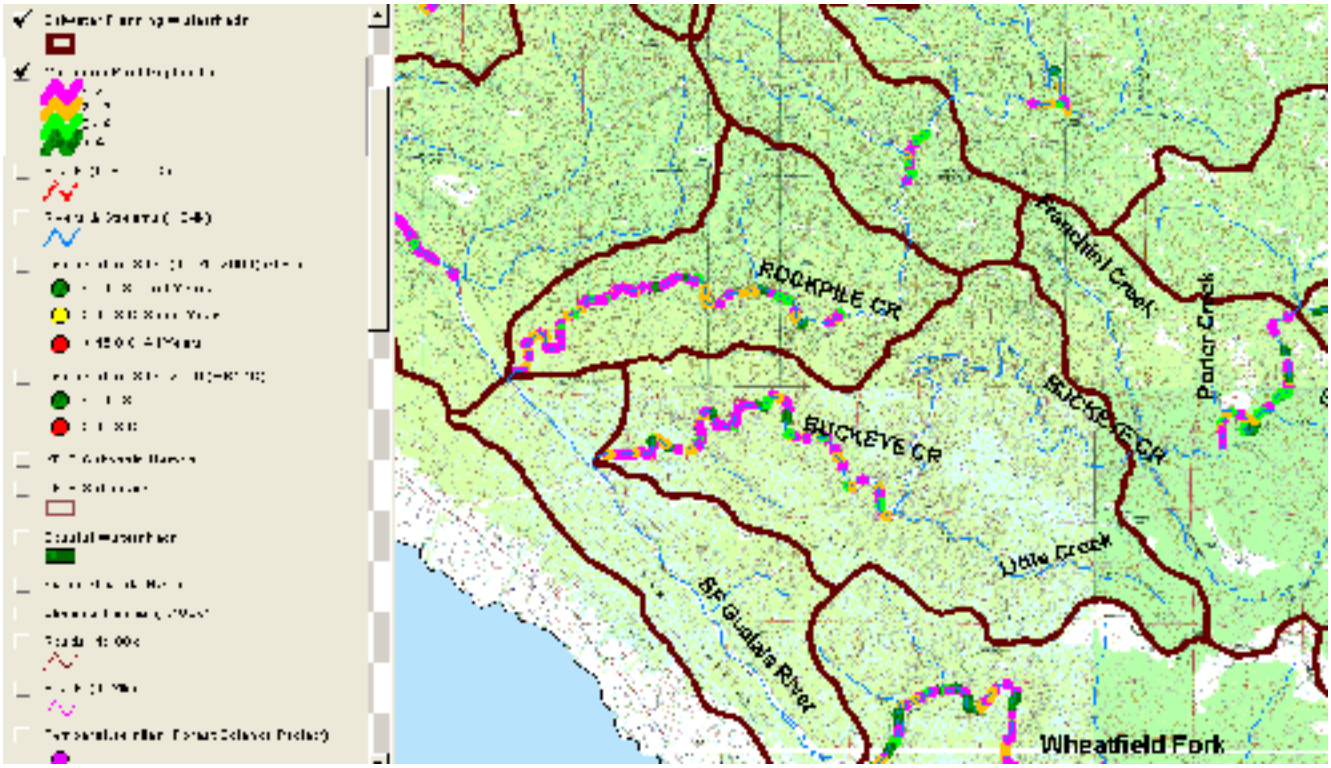

Figure 6. This map image shows pool depth in lower Buckeye Creek, lower Rockpile Creek and pert of the lower Wheatfield and SF Gualala River according to CDFG (2001) data.

Gualala River basin at over 8 miles per square mile (mi/mi^2). This exceeds by a large margin the threshold of 2.5 mi/mi^2 established by NMFS (1996) for a properly functioning watershed condition. Cedarholm et. al. (1981) found that road densities greater than 1.5 mi/mi^2 yielded sediment levels that compromised the success of salmonid spawning. Jones and Grant (1996) noted that interception of sub-surface flows by road cuts as a major factor in increasing peak flows during storm events. The current conversion and THP fails to acknowledge this significant CWE with regard to roads, which the effects of THP 1-04-030SON/TCP #530 must be judged.

Timber Harvest and Cumulative Watershed Effects

Timber harvest rates in Gualala River Calwater Planning Watersheds between 1991 and 2001 show that some sub-basins have been harvested at rates as high as 78% (Figure 8). Reeves et al. (1993) pointed out that logging in over 25 % of a watershed's area in less than 30 years compromised aquatic habitat diversity and cause loss of diversity of Pacific salmon species. CDFG (CA RA, 2001) habitat typing data showed that pool frequency by length was low in recently harvested basins, a result similar to that described by Reeves et al. (1993). All Buckeye Creek Calwater Planning Watersheds are over this prudent level of disturbance of 25% timber harvest in just ten years of records provided by CDF. Another troubling aspect of the THP 1-04-030SON/TCP #530 application is its failure to acknowledge major removal of timber that does not appear as part of CDF records (Figure 9). Kauffman et al. (1999) point out that riparian areas and watersheds can only recover when anthropogenic stressors are ameliorated. This conversion and timber harvest is particularly ill-timed because of the already widespread nature of watershed disturbance from timber harvest and roads at this time.

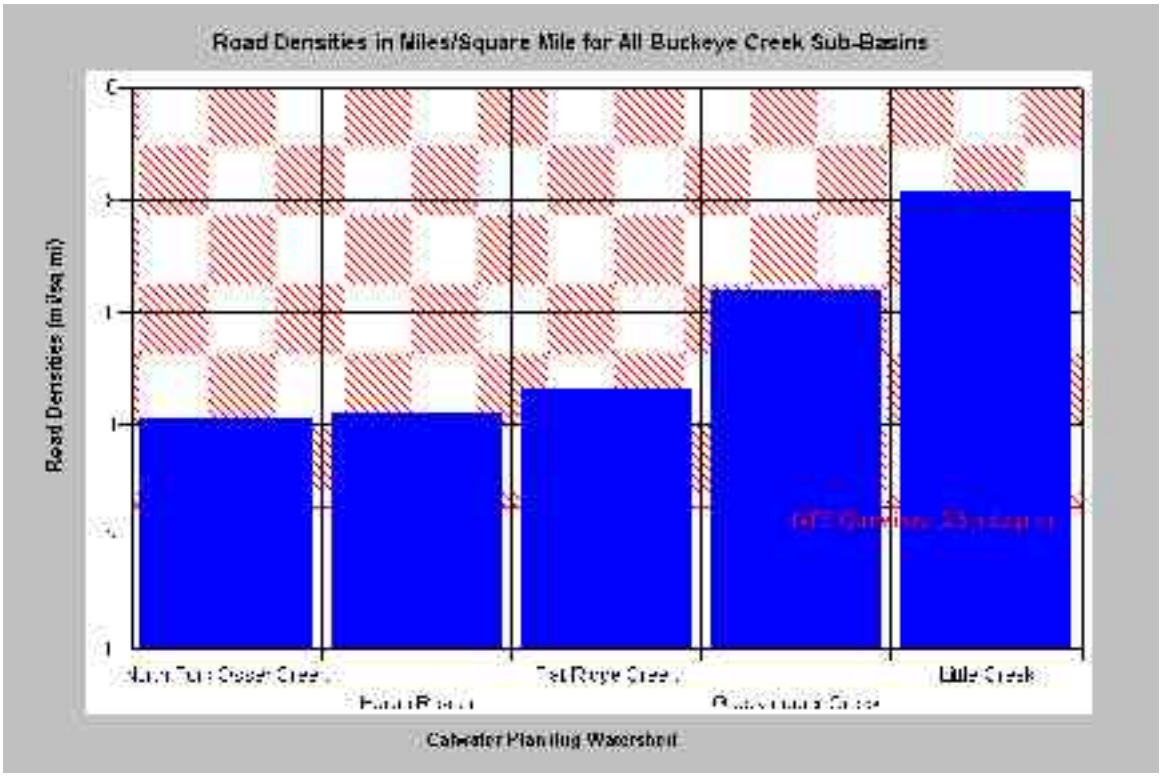

Figure 7. This chart shows the density of roads in miles per square mile for Buckeye Creek watershed with references based on NMFS (1996). Data from UC Davis ICE and North Coast Regional Water Quality Control Board.

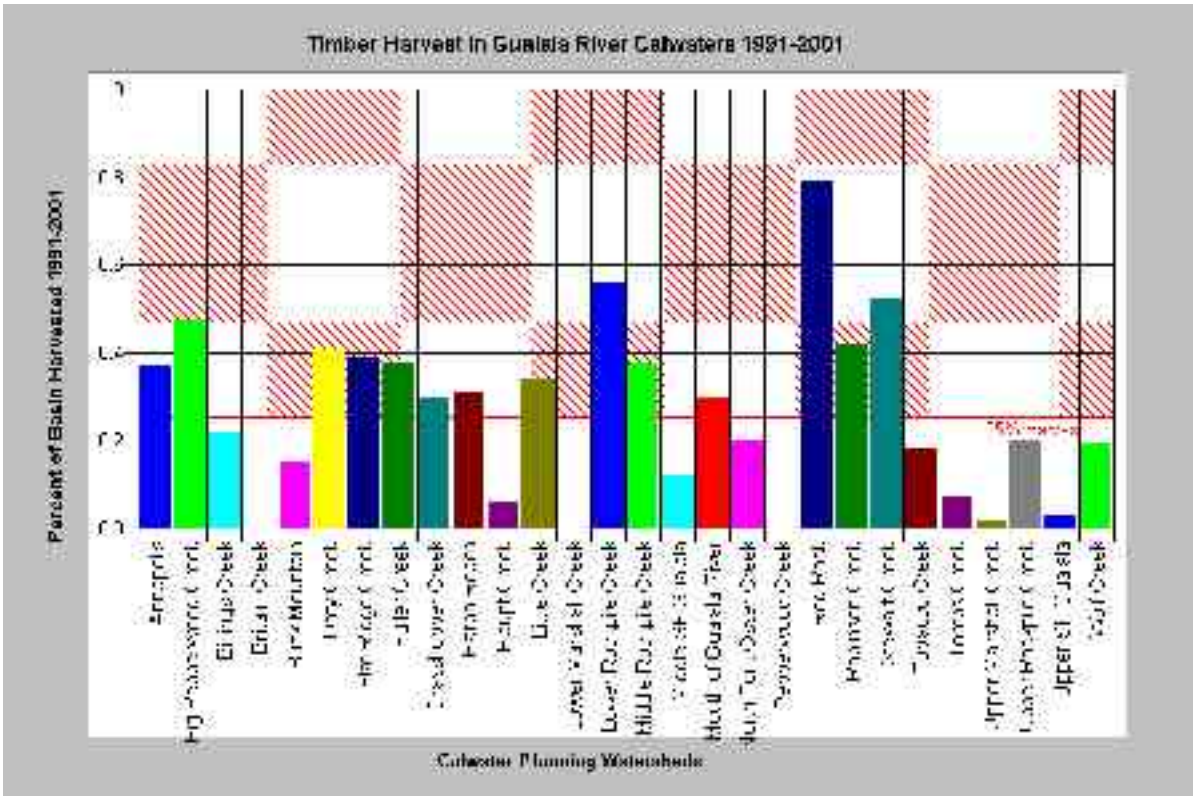

Figure 8. The timber harvest in all Gualala River Calwater Planning Watersheds is shown above as percentage of watershed area. Half of the basins are more than 25% cut in just over ten years, including all Buckeye Creek Calwaters (Little, Grasshopper, Harpo and Flat Ridge) except NF Osser Creek. Data from CDF, Santa Rosa.

Figure 9a. Area of THP 1-04-030SON/TCP #530 in 1990 showing almost complete cover, but high road and skid trail densities.

Figure 9b. This photo shows the same area as Figure 9a in 1996 with major changes in vegetation, but no THPs filed.

Figure 9c (At left): The most recent aerial photo shows major new openings and substantial thinning of forests, again with no record from CDF for timber harvests on file. This type of large scale vegetation removal is a clear cut equivalent in places and likely already contributing to changes in runoff patterns (Jones and Grant, 1996), even without further conversion to vineyards.

THP 1-04-030SON/TCP #530 makes a number of gratuitous statements with regard to cumulative watershed effects:

- The impacts of the harvesting plans listed have been mitigated to a level of insignificance. The possible impacts of the proposed plan have been mitigated to the level of insignificance.

- Overall impacts from past timber management appear to have been beneficial.

- Recent projects are all subject to intensive pre and post project multi-agency review and follow-up. Concerns have been addressed and mitigated.

Dunne et al. (2001) point out that in fact widespread disturbance in the Gualala River, Buckeye Creek and Little Creek watersheds, as documented above, have major impacts which the plan and CDF do not acknowledge:

> "Generally speaking, the larger the proportion of the land surface that is disturbed at any time, and the larger the proportion of the land that is sensitive to severe disturbance, the larger is the downstream impact. These land-surface and channel changes can: increase runoff, degrade water quality, and alter channel and riparian conditions to make them less favorable for a large number of species that are valued by society. The impacts are typically most severe along channels immediately downstream of land surface disturbances and at the junctions of tributaries, where the effects of disturbances on many upstream sites can interact."

It has been pointed out that THP 1-04-030SON/TCP #530 does not deal sufficiently with endangered and threatened salmonid species and Dunne et al. (2001) point out that at risk populations can be lost, if cumulative effects are ignored and anthropogenic stressors continued:

> "Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. They may occur at a site through repetition of a change caused by successive operations, or through two or more results of an operation, or they may occur at a site remote from the original land transformation and with some time lag. The concern about cumulative effects arises because it is increasingly acknowledged that, when reviewed on one parcel of terrain at a time, land use may appear to have little impact on plant and animal resources. But a multitude of independently reviewed land transformations may have a combined effect, which stresses and eventually destroys a biological population in the long run."

Dunne et al. (2001) also point out that CWE must be managed by minimizing risk: "Inevitably, the institutional aspects involve decisions about how much environmental and other risks are acceptable in a project. Before the institutional evaluation can be made, however, the risks of CWEs need to be identified in some transparent manner." The lack of provision of sufficient information on which to judge impacts of THP 1-04-030SON/TCP #530 fails the test of transparency. CDF should be rejecting this project because the high existing impacts and additional threats posed by previously permitted or completed projects, not proposing a Negative Declaration.

Flow Issues

The hydrologic review of THP 1-04-030SON/TCP #530 is not complete or credible. It states categorically that "Once the vineyard is established, the conversion will likely result in a net increase in water availability" without providing any substantive discussion or noting current flow levels in Little Creek or their importance in supporting fish life. The project will use tile drains that are likely to block ground water percolation, establishes a pond and will also employ deep water wells. Kamman Hydrology and Engineering (2003) studied a similar setting in the Gualala basin where a conversion was planned and asserted that similar activities to those proposed in this project would block infiltration into ground water in headwater swales. Cool water base flows in summer are important for maintaining steelhead and recovering coho salmon in Buckeye Creek and it is likely that this activity will reduce those flows at a time when they are already severely flow limited. CDF does not have the experience or expertise in this area to properly evaluate changes in flow related to vineyard development. Changes in hydrology and flow diversions or reductions, such as those likely to occur under THP 1-04-030SON/TCP #530, should require a full scale EIS under CEQA.

Leopold and McBain (1995) also pointed out that wide spread compaction related to timber harvest in the Garcia River basin elevated winter runoff. This finding is similar to Jones and Grant (1996) who estimated that when 25% of the area of a basin were impacted by timber harvest and roads that flow increases of 50% resulted. They note that increased peak flows can scour riparian areas, potentially elevating water temperatures.

Conclusion

The extremely poor health of the Gualala River watershed and Buckeye Creek sub-basin are ignored by the environmental review documents filed with regard to THP 1-04-030SON/TCP #530. The Gualala River is losing its ability to support coho salmon and steelhead trout. Sediment over-supply is evident in the mainstem Buckeye Creek and its tributaries in the vicinity of the plan.

Rieman et al. (1993) characterize a salmonid population as at moderate risk of extinction when:

> "*Fine sediments, stream temperatures, or the availability of suitable habitats have been altered and will not recover to pre-disturbance conditions within one generation (5 years). Survival or growth rates have been reduced from those in undisturbed habitats. The population is reduced in size but no long-term trend in abundance exists."*

The conditions described above fairly characterize the Gualala River and its steelhead population, while the coho population would merit a high risk classification (CDFG, 2002). This level of risk is nowhere acknowledged in the Plan and discussions do not even include data from the effected tributary Little Creek, which may be a key cold water refuge for steelhead juveniles.

This project is likely to decrease ground water recharge and thus reduce base flows in summer needed by salmonids. The reduced cold water flow will also increase problems with elevated water temperature. Increased sediment from the site will also contribute to stream warming as it reduces the width to depth ratio of the stream and increases opportunities for heat exchange with the atmosphere. Impacts from these projects coupled with existing high levels of disturbance and existing problems with aquatic health are likely to have dire consequences for the prospect of salmonid recovery in the Gualala River basin.

Additional timber harvests in the Gualala River basin, and especially vineyard conversions, should not go forward until water temperature and sediment transport have returned to unimpaired levels and salmonid productivity has been restored. Road densities in the Little Creek Calwater Planning Watershed and those adjacent should meet "properly functioning condition" for salmonids of less than 2.5 miles of road per square mile (including landings) and have few or no streamside roads (NMFS, 1996) before additional, large scale disturbance is allowed.

This timber harvest and conversion, in combination with others already permitted, are highly likely to negatively impact coho salmon and steelhead in the basin and will help continue the trend toward increased sediment, increased water temperatures and decreased surface flows. Ultimately the entire aquatic community of the Gualala is at risk from such activities, including non-listed species like the Sacramento sucker (Higgins, 2003b), as more of the river will lose surface flow. The Negative Declaration should be withdrawn and a full EIS required.

Sincerely,

Patrick Higgins

References

Brown, L.R., P.B. Moyle, and R.M. Yoshiyama. 1994. Historical Decline and Current Status of Coho Salmon in California. North American Journal of Fisheries Management. 14(2):237-261.

CA Department of Fish and Game. 2002. Status Review of California Coho Salmon North of San Francisco . Report to the California Fish and Game Commission. California Department of Fish and Game, Sacramento , CA. 336pp.

California Resources Agency. 2002. Gualala River Watershed Synthesis. CA Dept. of Fish and Game, State Water Res. Control Bd., CA Dept. of Water Resources, CA Div. on Mines and Geology and CA Dept. of Forestry. Sacramento, CA.

California State Water Resources Control Board. 2001. Technical Support Document for the Gualala River Watershed Water Quality Attainment Action Plan for Sediment. CRWQCB, Region 1. Santa Rosa, CA. 147 pp.

Cedarholm, C.J., L.M. Reid, and E.O. Salo. 1981. Cumulative effects of logging road sediment on salmonid populations in the Clearwater River, Jefferson County, Washington. p.3874. In: Proceedings from the conference Salmon-Spawning Gravel: A Renewable Resource in the Pacific Northwest? Rep. 39. State of Washington Water Research Center, Pullman, WA.

Dunne, T., J. Agee, S. Beissinger, W. Dietrich, D. Gray, M. Power, V. Resh, and K. Rodrigues. 2001. A scientific basis for the prediction of cumulative watershed effects. The University of California Committee on Cumulative Watershed Effects. University of California Wildland Resource Center Report No. 46. June 2001. 107 pp.

Higgins, P.T. 1997. Gualala River Watershed Literature Search and Assimilation. Funded by the Coastal Conservancy under contract to Redwood Coast Land Conservancy. Gualala, CA. 59 pp.

Higgins, P.T. 2003a. Letter to Allen Robertson, Deputy Chief, California Department of Forestry and Fire Protection regarding Timberland Conversion Application 02-506 and Timber Harvest Plan (THP) 1—01-171 SON. May 20, 2003. Patrick Higgins, Fisheries Consultant, Arcata, CA. 10 p.

Higgins, P.T. 2003b. Letter to Allen Robertson, Deputy Chief, California Department of Forestry and Fire Protection regarding Negative Declaration for Sugarloaf Farming Corporation dba Peter Michael Winery, Timberland Conversion No. 524; THP 1-01-223 SON. December 12, 2003. Patrick Higgins, Fisheries Consultant, Arcata, CA. 10 p

Hilton, S. and T. E. Lisle. 1993. Measuring the fraction of pool volume filled with fine sediment. Res. Note PSW-RN-414. US Forest Service, Pacific Southwest Research Station. Albany, CA . 11 pp.

Kamman, G. 2003. Letter to Allen Robertson, Deputy Chief, California Department of Forestry and Fire Protection regarding Timberland Conversion Application 02-506 and Timber Harvest Plan (THP) 1—01-171 SON. Kamman Hydrology and Engineering.

Kauffman, J.B., R.L. Beschta, N. Otting, and D. Lytjen. 1997. An Ecological Perspective of Riparian and Stream Restoration in the Western United States. Fisheries 22(5):12-24.

Knopp, C. 1993. Testing Indices of Cold Water Fish Habitat. Final Report for Development of Techniques for Measuring Beneficial Use Protection and Inclusion into the North Coast Region's Basin Plan by Amendment of the.....Activities, September 18, 1990. North Coast Regional Water Quality Control Board in cooperation with California Department of Forestry. 57 pp.

Ligon, F., A. Rich, G. Rynearson, D. Thornburgh, and W. Trush. 1999. Report of the Scientific Review Panel on California Forest Practice Rules and Salmonid Habitat. Prepared for the Resources Agency of California and the National Marine Fisheries Service; Sacramento, CA.

Leopold, L. and S. McBain. 1995. Sediment processes in the Garcia River estuary related to enhancement feasibility. Final report. Performed under contract with Moffett and Nichol Engineers. Funded by the Mendocino Resources Conservation District. 29 pp.

National Marine Fisheries Service. 1996. Coastal Salmon Conservation: Working Guidance for Comprehensive Salmon Restoration Initiatives on the Pacific Coast. US Dept. Commerce, NOAA. 4 pp.

National Marine Fisheries Service. 2001. Status Review Update for Coho Salmon (Oncorhynchus kisutch) from the Central California Coast and the California portion of the Southern Oregon/Northern California Coasts Evolutionarily Significant Units. Southwest Fisheries Science Center, Santa Cruz, CA. 43 p.

Reeves, G.H.1988. Distribution patterns of fish in the Elk River basin. COPE Report l(3): 4-6.

Reeves, G.H., F.H. Everest, and J.R. Sedell. 1993. Diversity of Juvenile Anadromous Salmonid Assemblages in Coastal Oregon Basins with Different Levels of Timber Harvest. Transactions of the American Fisheries Society. 122(3): 309-317.

Rieman, B. 1993. Consideration of Extinction Risks for Salmonids. As FHR Currents # 14. US Forest Service, Region 5. Eureka, CA. 12 pp.

Sullivan, K., D. J. Martin, R. D. Cardwell, J. E. Toll, and S. Duke. 2000. An analysis of the effects of temperature on salmonids of the Pacific Northwest with implications for selecting temperature criteria. Sustainable Ecosystems Institute . Portland, OR. 192 pp.

Taylor, S.N. 1978. The status of salmon populations in California coastal rivers. California Department of Fish and Game. Salmon/Steelhead Program, Anadromous Fisheries Branch. 14 pp.