Patrick Higgins
Consulting Fisheries Biologist
791 Eighth Street, Suite N
Arcata, CA 95521
(707) 822-9428
phiggins@humboldt1.com

December 12, 2003

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

Re: Negative Declaration for Sugarloaf Farming Corporation dba Peter Michael Winery, Timberland Conversion No. 524; THP 1-01-223 SON

Dear Mr. Robertson,

I am writing in regards to Timberland Conversion Application 524 and Timber Harvest Plan (THP) 1-01-223 SON in the upper South Fork Gualala River basin at the request of, and on retainer to local citizens, who are concerned about the deterioration of the Gualala River watershed. 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 nearer Annapolis on Patchet Creek, a tributary to the Wheatfield Fork Gualala (Higgins, 2003). Please review my last correspondence for my qualifications to comment in this regard.

These plans have the same patent flaws as the Annapolis proposal and issuance of a Negative Declaration with regard to environmental effects is again unjustified. As stated in my last comments, there is potential for irreversible and irretrievable loss of cold water habitat in the Gualala basin, including in this case the South Fork Gualala River. The analysis of impacts is fundamentally flawed because it does not focus on the scale of the South Fork Gualala and the Gualala watershed as a whole, which the North Coast Watershed Assessment Program (CRA, 2002) identified has having major cumulative effects problems. The South Fork was until recently one of the more productive Gualala basin salmonid habitats, but has deteriorated in recent years until it is a very impaired aquatic ecosystem even losing surface flows according to the California Department of Forestry's (CDF) own reports. A project with such acknowledged risk to fish, water quality and wildlife (NCRWQCB, 2002; CDFG, 2002) 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 salmon were known to occur in the South Fork Gualala, according to the California Department of Fish and Game (Cox, 1994; Park and Poole, 1964), yet there are no data or information in the plan as to whether they still persist in this sub-basin. 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. CDFG (2002) noted that coho salmon were "extirpated or nearly extirpated" in the Gualala. Conditions on the South Fork are already adverse for this species (see Sediment, Temperature) and further impacts related will diminish chances for recovery. The fact that coho salmon are on the verge of extinction should make any additional contributions of sediment from this project unacceptable.

Steelhead trout have also diminished substantially in distribution and abundance in the Gualala River watershed, with tributaries like the lower South Fork Gualala now supporting predominantly the California Roach (Levenia parvipinnis) and stickleback (Gasterosteus aculeatus) instead of juvenile steelhead in some seasons (Figure 1).

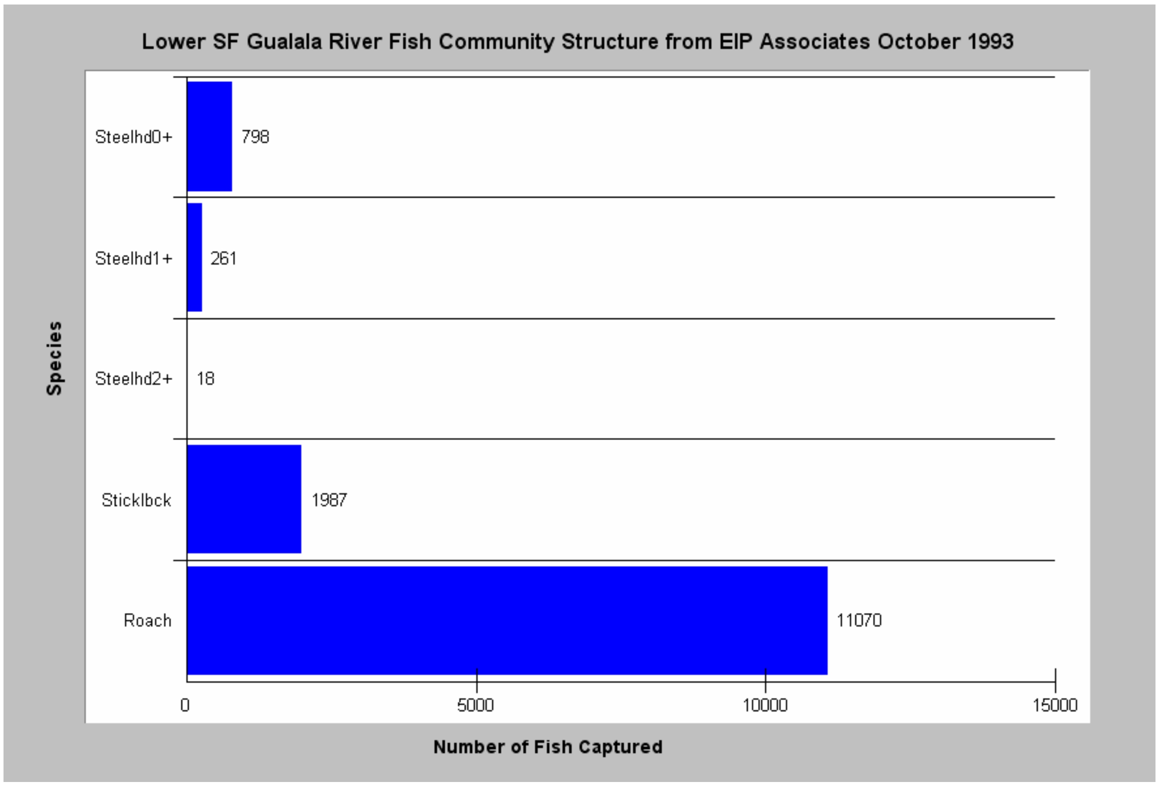

Figure 1. This chart shows results of dive surveys of the Lower South Fork Gualala River below the Wheatfield Fork in October 1993 by EIP Associates. The fish community was dominated by Gualala roach and stickleback with steelhead of several age classes present, but sub-dominant. Data from Gualala Aggregates gravel operation Environmental Impact Statement (EIS).

The fish community found by EIP Associates (1994) strongly suggests that the South Fork Gualala is compromised by elevated water temperatures. The lower South Fork has continued to deteriorate since that time and the South Fork at its convergence with the Wheatfield Fork now loses surface flows for much of the summer (CDF, 2002); therefore, periodically has no ability to support fish life of any kind (see Flow Issues).

The acute aggradation of the Gualala River mainstem reaches has shifted the ecology of the river substantially. CDFG (CA RA, 2003) electrofishing samples from the 100 miles surveyed in 2001 did not include the Sacramento sucker (Catostomus occidentalis). The absence of suckers in the Gualala River in all recent surveys is likely indicative of a major decline in their population, if not their wholesale disappearance. This fish is somewhat tolerant of sediment and very tolerant of warm water. Consequently, the Gualala River is well outside its normal range of variability with regards to its ability to support its native aquatic community. 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.

No fish data on the reaches potentially impacted was supplied with the plans, which makes them inadequate under CEQA.

Temperature

The lower mainstem and South Fork Gualala River have acutely stressful temperatures for salmonids in most mainstem habitats (Figure 2). Suitable habitat for coho salmon with regard to temperature is found only in small tributaries like Big (bpw) and Little (lpw) Pepperwood Creek, the upper reach of McKenzie Creek (mck) and two second order tributaries of the South Fork (gh250, gh277). Floating weekly average water temperatures of less than 16.8^0 Celsius (C) are needed to support rearing coho salmon juveniles, according to Welsh et al. (2001). They refer to the maximum annual floating weekly average water temperature as MWAT. Mainstem stations on the South Fork (sf) and lower mainstem Gualala are not only too warm for coho salmon but indicate that limits for steelhead are being reached. The floating weekly average temperature masks transient peaks and an MWAT of over 22^0 C is likely reaching day time highs of over 25^0 C, which is recognized as incipient lethal for Pacific salmon species (Sullivan et al., 2000).

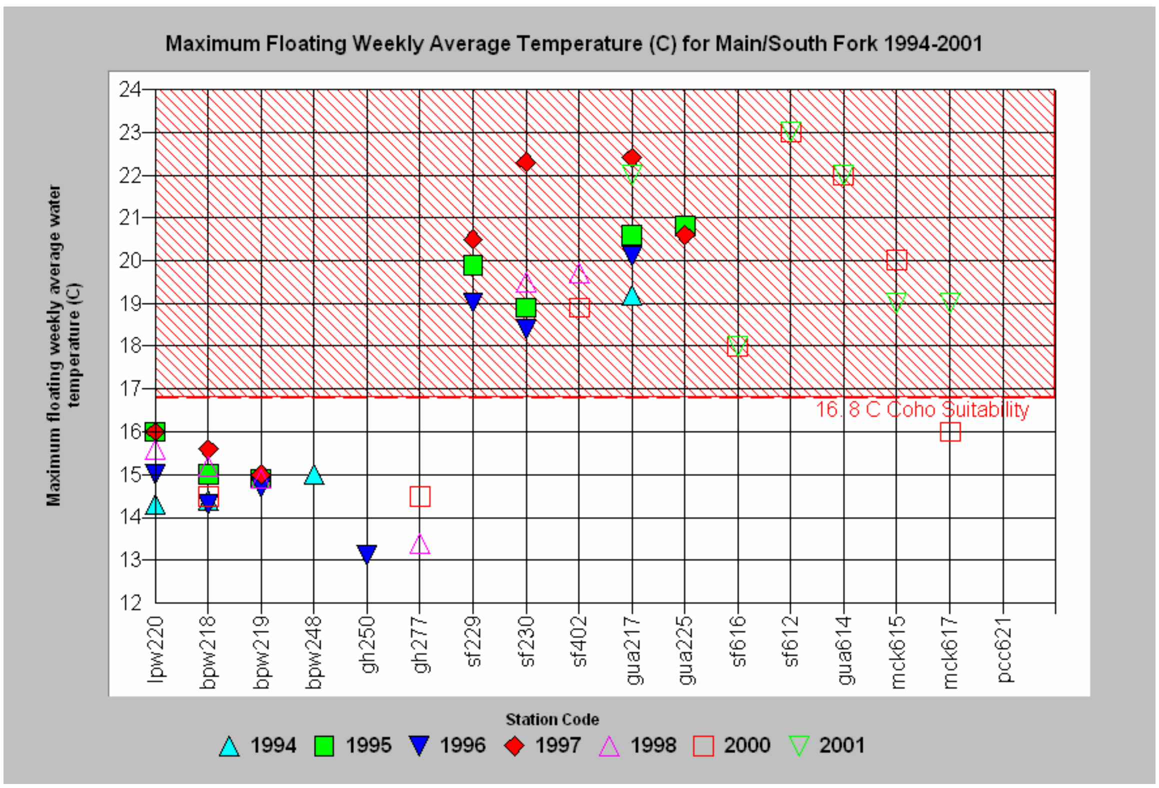

Figure 2. This chart shows the maximum floating weekly average water temperature (MWAT) for all automated temperature probes placed in the lower mainstem and South Fork Gualala River sub-basins from 1994 to 2001. Station location codes are pw = Big Pepperwood Creek, sf = South Fork Gualala River, gua = mainstem Gualala, mck = McKenzie Creek, and gh = lower mainstem tribs. Data provided by Gualala Redwoods, Inc. and the Gualala River Watershed Council.

Of particular interest in Figure 2 is mainstem Gualala River station (gua 217). This station shows a continuing pattern of increasing water temperature between 1994 and 2001. These years also coincide with very high rainfall following a prolonged drought (1986-1994). The pattern would be consistent with major aggradation at this location with the change in the width to depth ratio of the stream here driving increased heat exchange with the atmosphere (Poole and Berman, 2001). The South Fork itself is sufficiently cool at its headwaters above the proposed project to support coho and steelhead trout

(Figure 3), but is too warm for coho and stressful for steelhead in the South Fork further downstream, it's tributary McKenzie Creek and in the lower mainstem Gualala River.

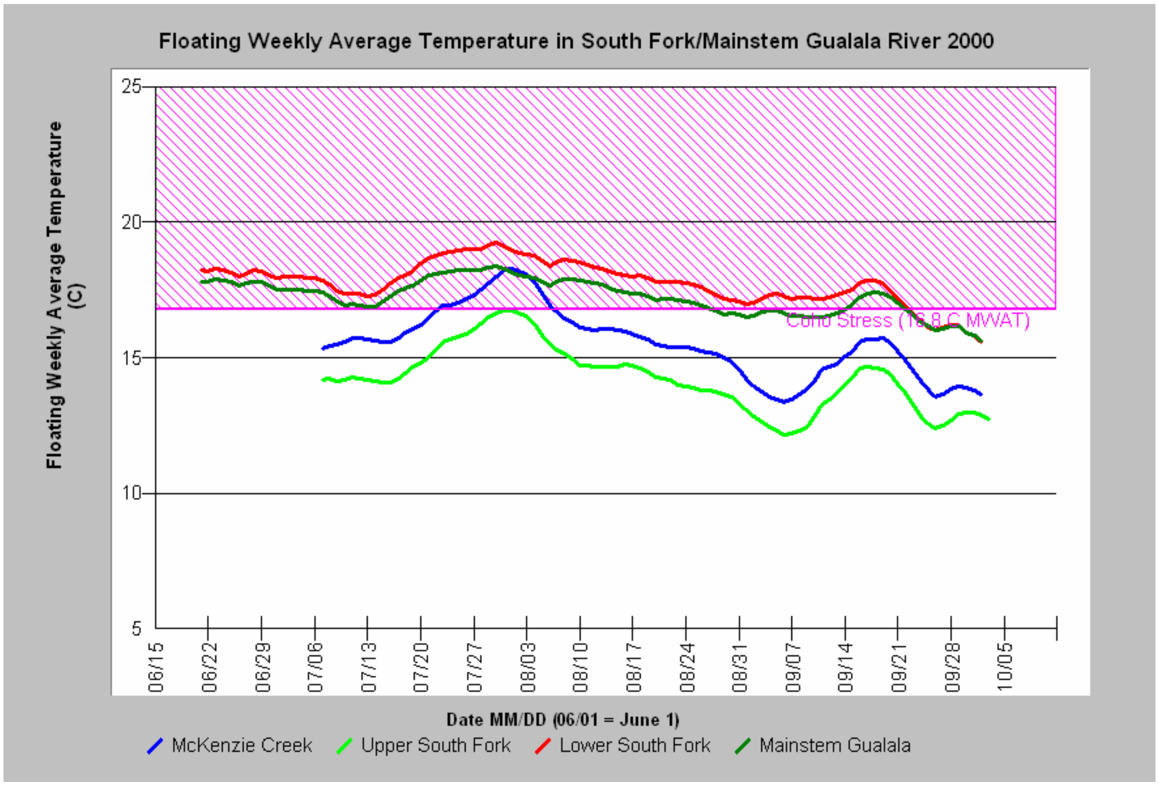

Figure 3. This chart shows the floating weekly average temperature at four sites on the South Fork, its tributary MacKenzie Creek and the lower mainstem Gualala River taken in 2000. Data were provided by the Gualala River Watershed Council.

The proposed project will likely exacerbate water temperature problems in two ways: 1) additional sediment contributions that fill pools and increase the width to depth ratio (see Sediment), and 2) reduced cool water base flows in summer because of how the project will block groundwater recharge (see Flows).

Sediment

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 SF Gualala basin (Figure 4), with 190 tons per square mile per year (tons/mi^2/yr) the background value. Documents associated with the plans note that Northwest Hydraulics Consultants established two suspended sediment monitoring sites in streams within the project area in winter 2000 and estimated that between February 24, 2000 and March 1, 2000, when a total of 5.82 inches of rain was recorded nearby, 470 tons per square mile (tons/mi2) were unleashed. This indicates that sediment measured by this one event produced greater sediment yield than expected for the entire year by the Gualala TMDL (CWRCB, 2001).

The geologic setting of the South Fork Gualala River is problematic for the project because it is located nearly on the San Andreas Fault. The bedrock underlying the THP area is marine sediment consisting mostly of sandstone and mélange shale of the Franciscan Complex. Huffman and

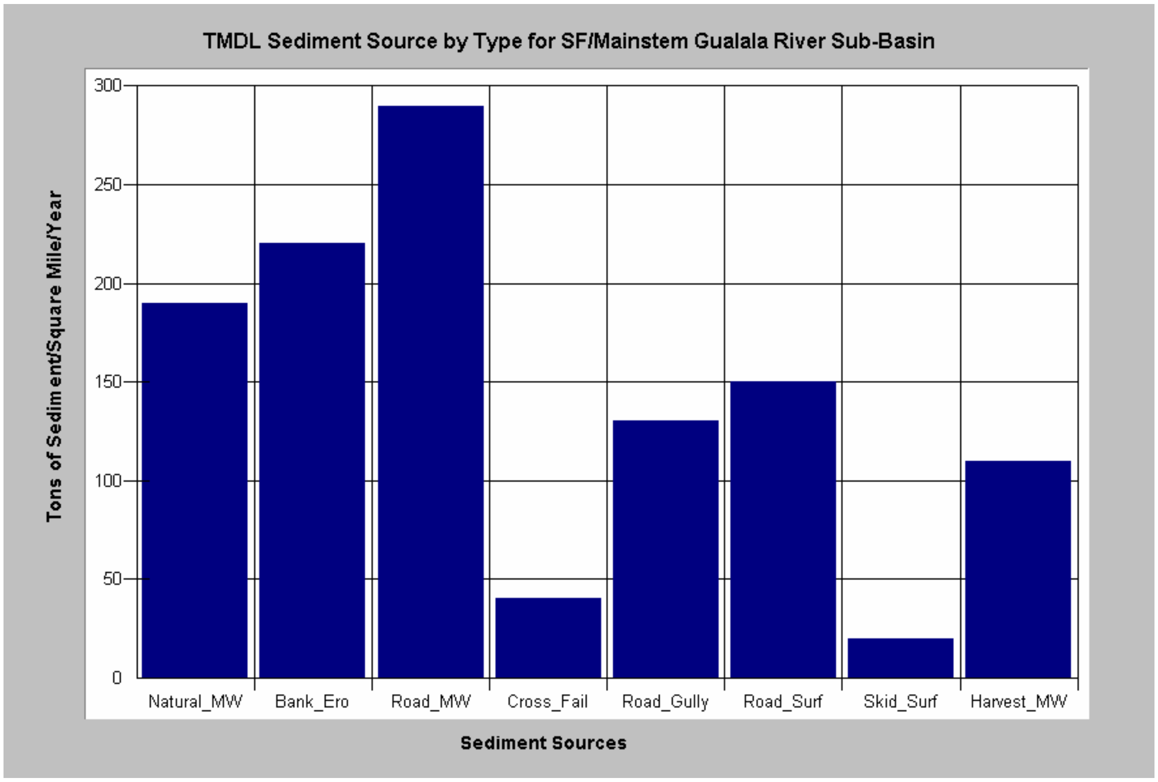

Figure 4. The South Fork Gualala basin sources of sediment estimated by the CWRCB (2001). Road sources had the highest sediment yield in combination. Estimated sediment yield is shown as tons of sediment yielded per square mile per year.

Armstrong (1980) classified the area as “relatively unstable rock and soil units, on slopes grater than 15%, containing abundant landslides” and the proposed project crosses slopes steeper than this. Additionally, several relatively recently active small-scale landslides were mapped in the THP area, many related to poor site drainage and poor road and skid trail construction from past site entries (CDMG, 2002).

Ground movement of up to twelve feet was measured in association with the 1906 earthquake in the South Fork Gualala basin (Huffman, 1972). Nouakchott (1980) noted other effects of the event: “East of Stewart’s Point the bridge over the South Fork Gualala River was damaged by slumping of the river terrace on which its south end rests. On both sides of the sharp bend of the river east of the bridges are extensive landslides, making a clean sweep down the mountainside…..The slopes east of the river (near Casey’s Ranch) were similarly effected and fallen timber produced a tangle not unlike that of extensive windfalls. In at least two places the (South Fork Gualala) river was temporarily dammed up by slides from both slopes meeting in the stream-bed.” The pond associated with this project poses an unacceptable risk of failure in the event of a large earthquake with likely catastrophic sediment yield to the South Fork Gualala River.

Roads are the most significant contributor of sediment in the South Fork and basin-wide (CWQCB, 2001) and road densities in the Gualala River watershed over-all are high, including the lower mainstem and South Fork sub-basins (Figure 5). Road densities in the Upper South Fork Gualala as of 2000 were 3.9 miles per square mile (mi/mi^2) and exceed the threshold of 3 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. The current conversion and THP proposes to increase the road density in the Upper South Fork Gualala basin by connecting and reconstructing old roads, providing approximately 8,000 linear feet of new actively used road. The new road will increase sediment delivery by

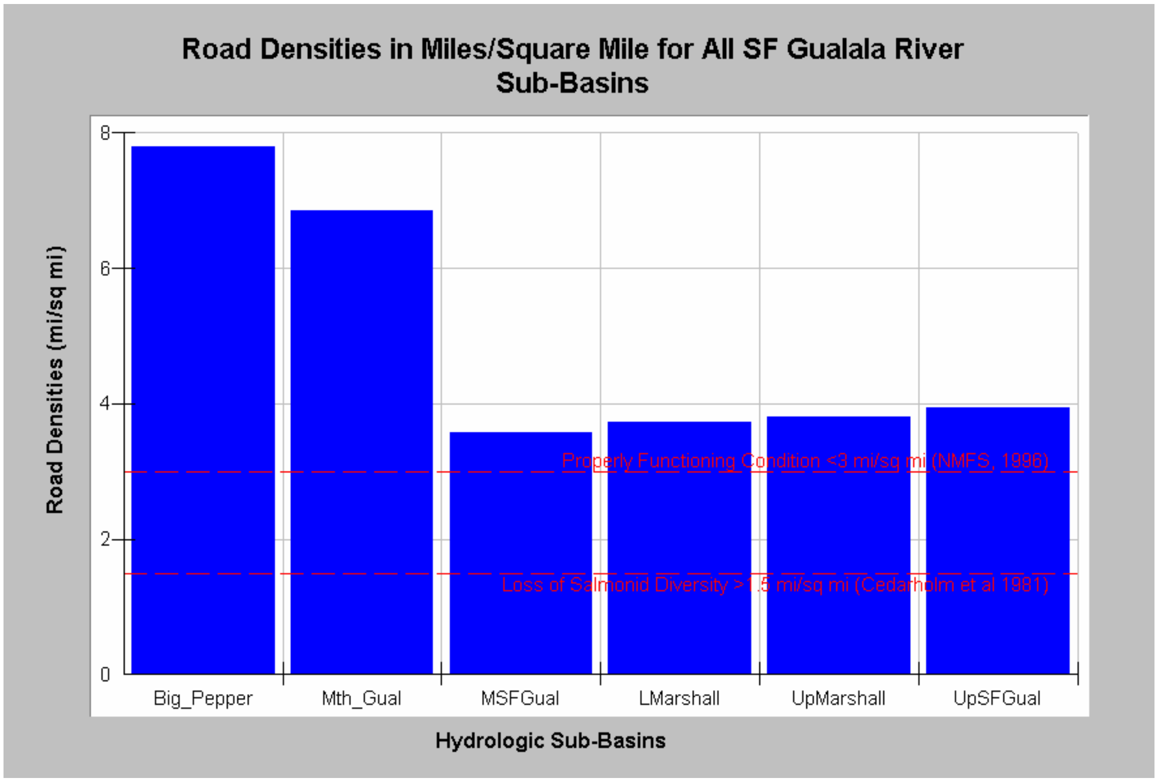

Figure 5. The Chart above shows the density of roads in miles per square mile for South Fork Gualala Calwater Planning Watershed with references based on NMFS (1996) and Cedarholm, et. al. (1981). Data from UC Davis ICE and North Coast Regional Water Quality Control Board.

channeling flow and bank cut, road fill, and surface erosion (RWQCB, 2002). The road density data under-represent actual problems with compaction of soils. They do not include landings, temporary roads and skid trails. The proposed alignment crosses steep and unstable slopes, active slides and 17 watercourses (Class II and III), many that flow through unstable areas (CDMG, 2002). These roads will yield sediment regardless of mitigation and additional sediment contributions to the South Fork Gualala and lower mainstem should not be allowed at this time because of major problems with aggradation.

The most obvious manifestation of sediment over-supply, however, is the fact that South Fork Gualala River is so aggraded that it loses surface flow for much of the summer at its mouth and in upstream reaches. Figure 6 shows the highly aggraded South Fork at its convergence with the Wheatfield Fork Gualala River in early April 2002. The photo shows a very narrow wetted channel and a wide and open and gravel bar. CDF (2002) noted that the mainstem South Fork was underground in summer in comments on a proposed riparian timber harvest (see Flow Issues).

The aggraded gravel beds of the mainstem Gualala and its larger tributaries have very small median particle size (D50) distribution. Small D50 indicate recent contributions of sediment from upslope areas (Dietrich et al., 1989) and samples from the lower mainstem and South Fork Gualala show many sites with similarly small D50 (Figure 7). Knopp (1993) studied 60 north coast California watersheds and found that watersheds with high timber harvest management had a D50 of less than 37 mm, but that recovered or control watersheds had a D50 between 50-88 mm. Nawa et al. (1991) noted that small average particle size distribution in salmonid spawning streams lead to bed load mobility and very low spawning survival rates. The small D50 indicates very degraded spawning habitat conditions for salmonids at most locations.

Figure 6. South Fork Gualala as it joins the Wheatfield Fork Gualala River with a very large sediment plug visible at left. The stream lost surface flow here several months later. Photo by Pat Higgins, April 10, 2002.

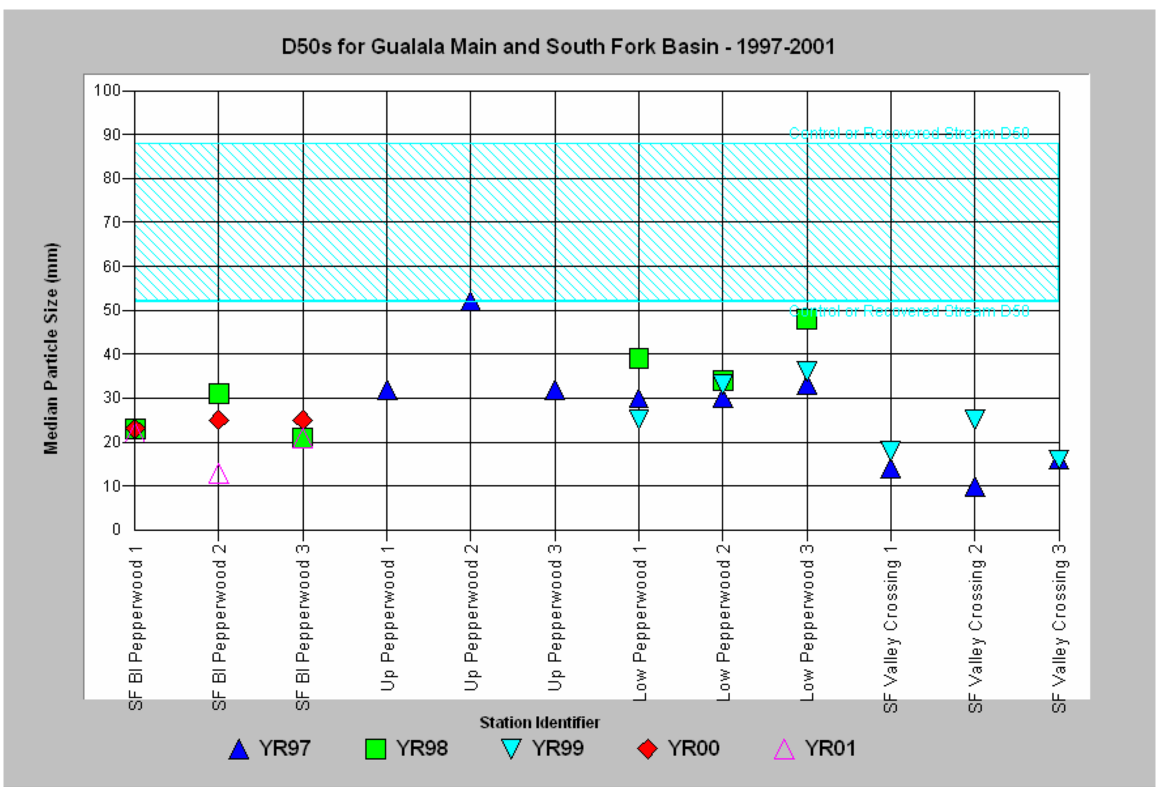

Figure 7. The median particle size distribution of the streambed on the lower SF Gualala River and Big and Little Pepperwood Creek are displayed above with a reference line representative of control or recovered watersheds (40 years rest) from Knopp (1993). Data provided by Gualala Redwoods Inc.

The condition of the South Fork Gualala near the project site is also not fully revealed in project planning documents. Figure 8 shows the South Fork Gualala River at Niestrath Road from a picture taken by NCRWQCB staff. Note the fine sediment on the terraces which indicate that soil loss is already occurring in other upland areas of the South Fork Gualala. Sediment in this size class is highly mobile and would be flushed downstream and replaced by gravels if there was not a high supply from current sources.

Figure 8. The South Fork Gualala River at Niestrath Road on February 13, 2001. Picture provided by Brian McFadden, North Coast Regional Water Quality Control Board.

There are fundamental flaws in the way that planning documents for this conversion and timber harvest calculate sediment yield. Northwest Hydraulics Consultants (2000) and Jones and Stokes (2003) derived theoretical pre- and post-project sediment yields that the proposed vineyard development would actually reduce sediment inputs to South Fork Gualala. Estimates used a number of generalized empirical methods including the Revised Universal Soil Loss Equation (RUSLE), Modified Universal Soil Loss Equation (MUSLE), and the Pacific Southwest Inter-Agency Method (PSIAC). None of the above methods were designed to be applicable to Pacific Northwest Coastal mountain areas (USDA, 1997). For example, the USLE methods were both developed for computing soil loss on gentle slopes in the Mid-western United. These equations contain a large factor of error for steep and irregular slopes. The PSIAC method was developed in the arid Southwest Mountain regions that contain thin erodible soils and alluvial fan topography (PSIAC, 1968). The sediment yield is actually likely to be much higher than estimated, possibly orders of magnitude given the other local site conditions described above.

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 9). Reeves et al. (1993) aquatic habitat diversity and 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). High harvest rates in basins like lower Rockpile and Big Pepperwood Creek have caused sediment evulsions that are combining with sediment from other sub-basins. The over-supply below Pepperwood Creek in recent years has caused a loss of surface flow (see below). The plans for this timber harvest and conversion also do not discuss cumulative effects of extensive, recent, riparian timber harvests along the lower South Fork Gualala (Figure 10). 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.

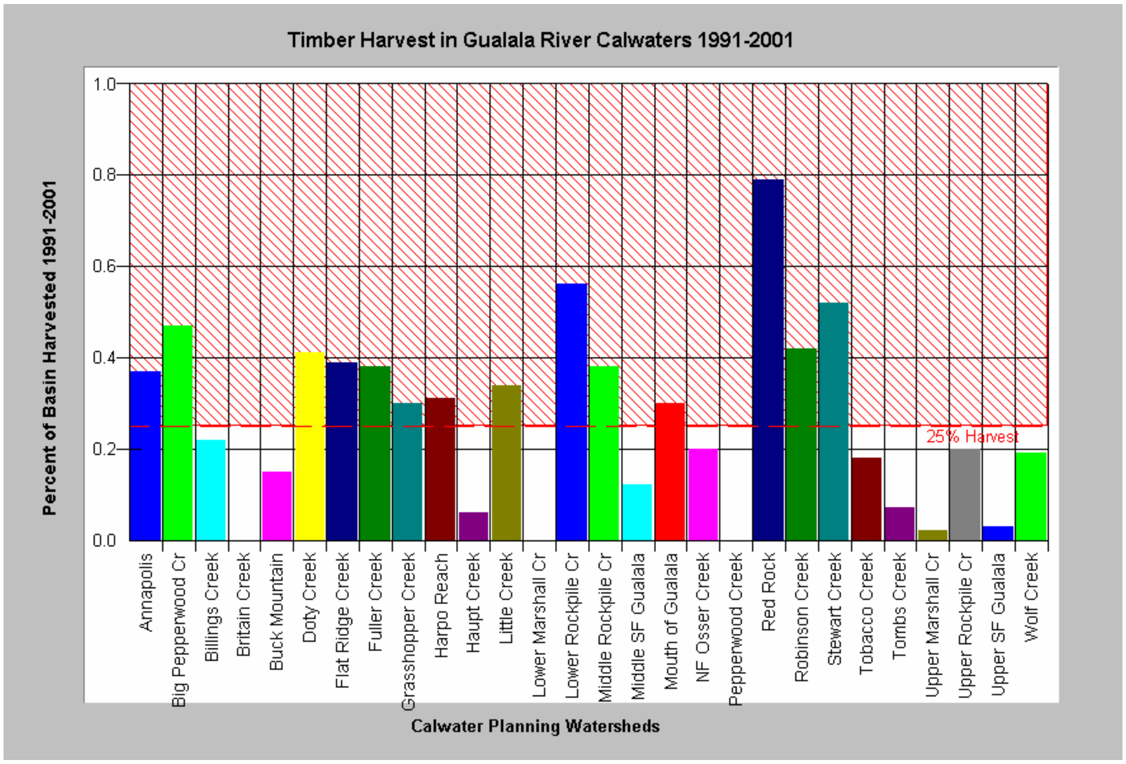

Figure 9. The timber harvest in all Gualala River Calwater Planning Watersheds is shown above as percentage of watershed area. Half of the basins are more than 25% cut in just over ten years. Data from CDF, Santa Rosa.

Conversion Plan 524 and THP 1-01-223 SON and background documents provided do not adequately discuss cumulative effects from previous logging and their effects on landscape stability (NCRWQCB, 2002). Past timber harvest and roads have initiated landslides that may be activated by re-entry. Huffman (1972) in studies of the Gualala basin noted that landslides, once initiated, “influence surrounding terrain by removing support as they move downslope”. These antecedent conditions make it highly unlikely that erosion control measures will succeed and instead substantial contributions of sediment are likely to occur.

Flow Issues

The hydrologic review of this project is not credible when it states winter flows will not increase and summer flows will not decrease when this plan is implemented. Many natural seeps and wet areas within the conversion will be rocked, piped and covered with soil. 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 the South Fork Gualala River and it is likely that this activity will reduce those flows at a time when the lower mainstem Gualala, South Fork and other major tributaries are severely flow limited.

The California Department of Water Resources (CA RA, 2002) indicated that aggradation had decreased water supply in the Gualala River basin, particularly the lower Gualala River and estuary. CDFG 2001 habitat typing surveys (CA RA, 2001) found that extensive reaches of the Gualala River and its tributaries lacked surface flows, including the mainstem South Fork Gualala below Big Pepperwood Creek (Figure 11). CDFG found flows of 12.5 cfs in this reach in 1977, during an extreme drought (Barrocco and Boccione, 1977). The Wheatfield and upper South Fork contributed three cfs, the North Fork 4.3 cfs, and five cfs came from Buckeye, Rockpile and Big Pepperwood creeks. In 2001, the Wheatfield Fork, upper South Fork and Rockpile were subsurface at, or near, their mouths. Fort Ross rainfall records indicate that only 16.01 inches of rain fell in 1977 while 24.56 fell in 2001. Even if the loss of flow is in part due to increased flow diversion, the mainstem environments of the Gualala are severely impaired. Any additional flow diversions or reductions, such as those likely to occur under Timberland Conversion No. 524; THP 1-01-223 SON, should require a full scale EIS under CEQA due to extremely low flow conditions that currently prevail. While the reduction in flow will likely have negative impacts on salmonids, further flow depletion is also likely to further impact other beneficial uses as well, such as swimming and/or boating.

Leopold and McBain (1995) also pointed out that wide spread compaction related to timber harvest in the Garcia River basin elevated winter runoff as well (Leopold and McBain, 1995). The overall extent of compaction in the watershed and changes in flow basin wide should be considered along with changes in hydrology at the specific site of this conversion and timber harvest.

Figure 10. The South Fork Gualala River winds around a Gualala Redwoods Inc. clear-cut. This is one of many patch clear-cuts that add to problems elevated water temperature and high sediment yield.

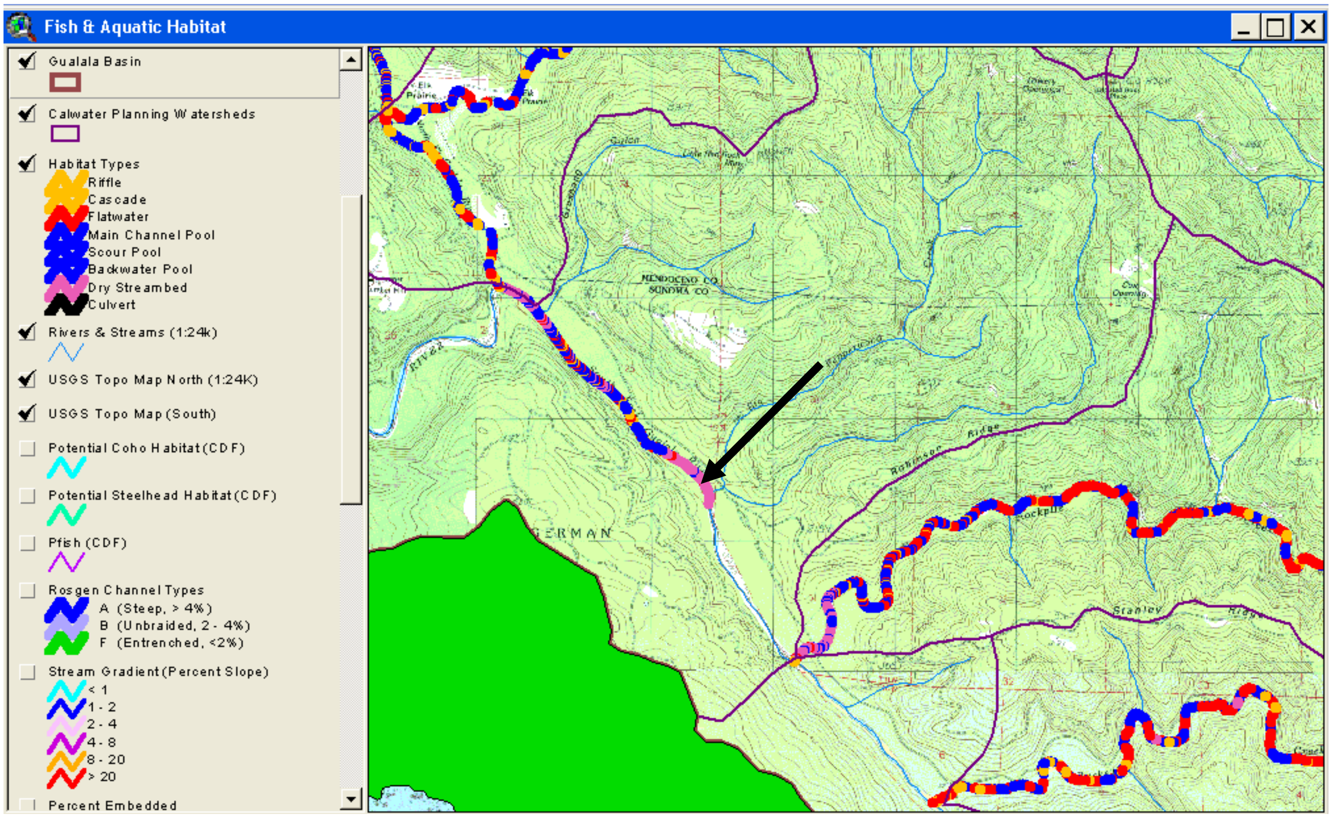

Figure 11. This habitat typing map of CDFG 2001 results (CA RA, 2001) show that the mainstem of the lower South Fork went dry below Big Pepperwood Creek in September 2001, as indicated by the hot pink designation where the arrow is pointing. Rockpile Creek and Buckeye Creek show below and the North Fork Gualala above.

Conclusion

The extremely poor health of the Gualala River watershed and South Fork Gualala sub-basin are ignored by the environmental review documents filed with regard to Timberland Conversion No. 524; THP 1-01-223 SON. The South Fork Gualala River is losing its ability to support coho salmon and steelhead trout. Only the upper reaches of the South Fork near the project are cool enough to be optimal rearing habitat, but the river below the project reaches stressful or lethal levels for these fish. Sediment over-supply is evident in the mainstem South Fork in the vicinity of the plans from photos provided by the NCRWQCB and the South Fork is so aggraded in its lower reaches that it is losing surface flow.

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 upper South Fork Gualala and the effected tributaries, which may be a key cold water refuge for steelhead and/or coho salmon 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 upper South Fork Gualala River watershed 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, as more of the river will lose surface flow. At that point, other beneficial uses under the Clean Water Act such as boating and swimming may also be diminished or lost.

Sincerely,

Patrick Higgins

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