May 18, 2005

Jeff Young, Chair
Members of the Board
Central Coast Regional Water Quality Control Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401

Subject: Draft General Conditional Waiver of Waste Discharge Requirements - Timber Harvest Activities in the Central Coast Region – Resolution No. R3-2005-0066 and Monitoring and Reporting Program.

Greetings Chair Young and Members of the Board,

The Lompico Watershed Conservancy, Citizens for Responsible Forest Management and the Sierra Club-Santa Cruz Group respectfully submit the following comments in two sections: (1) the Negative Declaration and (2) the Monitoring and Reporting Program. Please incorporate, by reference, all previous testimony and comments submitted us.[1]

(1)The Negative Declaration

A Negative Declaration is not adequate under CEQA for a general Waiver of Waste Discharge Requirements under the proposed program. A Negative Declaration can only be made if "[t]here is no substantial evidence in light of the whole record before the lead agency" that a significant impact to the environment may occur. Pub. Res. Code § 21080(c)(1).

We contend that the program/project under consideration fails to meet this standard. Over the past two years, we (and others) have submitted substantial evidence into the record demonstrating that substantial negative effects to water quality, beneficial uses, and the environment do occur in Region 3 (Central Coast) as a result of timber harvest related activity, and we hereby submit additional comments and supporting documentation to show that the current general waiver requires an EIR, rather than a Negative Declaration, to be in compliance with CEQA. An EIR must be prepared if the cumulative impact may be significant and the project's incremental effect, though individually limited, is cumulatively considerable. In other words, if the waiver's incremental impacts will comply with the Basin Plan, the Water Board

[1] And previous comments by the Ocean Conservancy.

may find that its impacts are not cumulatively considerable. It is our collective opinion that the Water Board cannot make this finding.

The Negative Declaration, Negative Declaration Resolution (Resolution No. R3-2005-0075) and Initial Study presented by Regional Board staff for this item are all based, to an overwhelming extent, upon the pretext that the Forest Practice Rules, the Forest Practice Act and the review process for Timber Harvest Plans, Non-Industrial Timber Management Plans and related permits, hereafter referred to collectively as THPs, reduce environmental effects of logging related activity to a level below significance. The "Resolution" states:

> The record before the Regional Board contains no substantial evidence that a fair argument has been made that the project may have a significant effect on the environment.

This is an astonishing claim considering all the substantial evidence already submitted to the Board during the past 2+ years by the public and subject matter experts. This mounting body of evidence began collecting in the Regional Board's correspondence and comment record soon after the expiration of the Management Agency Agreement (January 1, 2003) placed the Central Coast Board squarely into the position of responsibility for regulating sediment discharge from Timber Harvest Operations.

It is clear that an EIR is called for. An EIR is required whenever substantial evidence in the record supports a "fair argument" that significant impacts may occur. Even if other substantial evidence supports the opposite conclusion, the agency nevertheless must prepare an EIR. *Friends of "B" Street v. City of Hayward* (1980), 106 Cal. App. 3d 988. *Stanislaus Audubon Society v. County of Stanislaus* (5th Dist. 1995) 33 Cal. App.4th, 150-151.

The draft proposal fails to address the requirement that cumulatively significant impacts be either absent or mitigated to an extent that is less than significant. See CEQA guidelines § 15064(i)(1); see also Pub. Res. Code § 21083(b) (mandatory finding of significance for effects that are "cumulatively considerable". According to the CEQA Guidelines:

> When assessing whether a cumulative effect requires an EIR, the lead agency shall consider whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable. An EIR must be prepared if the cumulative impact may be significant and the project's incremental effect, though individually limited, is cumulatively considerable. 'Cumulatively considerable' means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

The Initial Study describes the project as follows:

> [A]doption and implementation of a Resolution waiving waste discharge requirements for specified discharges associated with timber harvest activities in accordance with an approved California Department of Forestry and Fire

> Protection (CDF) Timber Harvest Plan (THP) and/or Non-Industrial Timber Management Plan (NTMP) within the Central Coast Region. . . . The project authorizes specified discharges associated with timber harvest activities to proceed in compliance with the CWC.

The Initial Study also notes that "CEQA and the FPRs both prohibit CDF from approving a project as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental impacts of the project." The CCRWQCB cannot rely on this determination, however, when it issues a *general* waiver for two basic reasons.

First, the individual THP review process does not necessarily adequately address significant effects:

> The U.S. EPA (DEIA Comments, November 1998) state, "[We] do not support the assumption that most significant effects of individual Timber Harvest Plans can be expected to be mitigated to a less than significant level through implementation of the [California Forest Practice Rules]."

> Additionally, the FPRs have never been certified as Best Management Practices by the U.S. EPA.

> The US Environmental Protection Agency and the State Water Resources Control Board are authorized to certify that the California Forest Practice Rules are Best Management Practices for timber operations on non-federal lands. When or if both entities so certify, timber harvest activities on non-federal lands will be exempt from waste discharge requirements pursuant to the Z'berg-Nejedly Forest Practice Act Section 4514.3, except as provided for in Section 4514.3(b)(1)-(3). That has not occurred to date.[2]

Secondly, while each individual THP may have a less-than-significant environmental impact, the general waiver and therefore the project, would cover them all, and there is substantial data to indicate that the FPRs and CDF's review of THPs do not adequately address cumulative impacts.

> "Despite the hoops that timber operators must jump through and the barriers erected by the planning process, the environment is not being effectively protected because of the flawed concept that the Timber Harvest Plan process is based on -- namely that ecology can be addressed on a parcel-by-parcel basis. In addition, the State's focus is almost entirely on procedural steps rather than on the eventual outcome. As a result, what occurs in the real world may have very little relationship to what is prescribed in a harvest plan, and there is no mechanism for linking demonstrated effectiveness of mitigation measures to future policy directives."[3]

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[2] (NCRWQCB Waiver.....

[3] Little Hoover Commission Report, Timber Harvest Plans: *A Flawed Effort to Balance Economic and Environmental Needs, 1994*

In the "Timber Harvest Planning Process" section of the Initial Study there is the following text.

> "Pursuant to the Clean Water Act Section 208, the State Water Board has adopted a management agency approach for controlling discharges from timber harvest activities to waters of the State. The Water Board, CDF and the BOF all have direct authority, responsibility, staffing resources and expertise to require that timber harvest activities on plans and notices are implemented, enforced and evaluated. On January 21 1988, the State Water Board approved a Management Agency Agreement (MAA) that designates the BOF and the CDF as joint management agencies for timber operations within the State.
>
> Under the management agency approach, the State and Regional Water Boards have much to gain by obtaining the commitment and cooperation of CDF and the BOF to act as partners in controlling discharges of waste from timber operations that they directly regulate. These benefits include:
>
> 1.Streamlining the regulatory process by avoiding duplicative regulatory requirements.
>
> 2. Incorporating the programs of CDF and BOF as being part of the State's non-point source program for controlling pollution and protecting the quality and beneficial uses of the State's water.
>
> 3. Reducing the level of resources needed by State and Regional Water Boards in controlling discharges from timber harvest activities.
>
> 4. Minimizing the expense to the public for review of plans and notices."

This "managing agency approach" was codified in the 1988 Management Agency Agreement (MAA). This agreement, a **categorical waiver** under which the various Regional Boards effectively ceded their responsibility for the protection of THP related water quality to CDF, was terminated by the State Legislature on January 1, 2003.

The Legislature took this action with the understanding that the MAA was a failure in regard to the protection of the beneficial uses of water by CDF. Staff's description of the "managing agency approach", without mention of the multi-agency failure to perform their responsibilities under the law, demonstrates a lack of understanding of past experience. **The lesson we derive from this history is that the CCRWQCB must be prepared to act independently of CDF when necessary and must recognize that CDF's enforcement of the Forest Practice Rules has failed to protect water quality.** Of the four supposed benefits of the "managing agency approach" listed above, only one (# 2) has anything to do with protecting the quality and beneficial uses of the State's water.

The following list of documents supplements support documents and letters previously submitted to your Board by Citizens for Responsible Forest Management, the Lompico Watershed Conservancy, The Ocean Conservancy and the Sierra Club. Other supporting comments have

been made by a variety of experts at your 2004 Waiver Workshop held in Santa Cruz, along with letters submitted in March 2005 (Curry, Jackson, and Herbert) at the request of your staff.

1. Categorical Waiver of Waste Discharge Requirements for Discharges Related to Timber Harvest Activities On Non-Federal Lands in the North Coast Region, ORDER NO. R1-2004-0016, California Regional Water Quality Control Board, North Coast Region

2. DECLARATION OF JOSEPH BLUM, NMFS, 2000, [retyped from faxed copy – 6.24.00], [For Case No.: 00-0713-SC. I/S. District Court, Northern District of California – EPIC et al. v. A. Tuttle et al.]

3. "Dunne Report", A Scientific Basis for the Recognition and Prediction of Cumulative Watershed Effects, June, 2001

4. Little Hoover Commission Report, Timber Harvest Plans: *A Flawed Effort to Balance Economic and Environmental Needs, 1994*

5. LSA Report, Conclusions and Recommendations For Strengthening the Review and Evaluation of Timber Harvest Plans, Prepared for California Department of Forestry and Fire Protection by LSA ASSOCIATES,INC., March, 1990

6. Regulation of Logging on Private Land in California Under Governor Gray Davis, Thomas N. Lippe and Kathy Bailey, Spring, 2001

7. Salmonid Conservation Measures for Forestry Activities, for a Short-Term HCP (Draft), NMFS, 1999

8. Santa Cruz County Justification Packet to the Board of Forestry – Proposed Rulemaking, Santa Cruz County Rules, October, 1998 (previously submitted on or about April 2003, into the record. Excerpts will be re-submitted. (We request that staff confirm that this document is in fact part of the administrative record.)

9. "Scientific Review Panel Report", Report of the Scientific Review Panel on California Forest Practice Rules and Salmonid Habitat, June 1999

10. US EPA: California Nonpoint Source Program Findings and Conditions, June 1998: http://www.epa.gov/Region9/water/nonpoint/cal/finding.html

11. March 8, 2005 letter by Robert Curry, Research Director Watershed Institute, CSUMB to RWQCB staff re Proposed Monitoring and Reporting Program (part of staff report)

These references and documents support a fair argument that significant impacts not only *may* occur but that they *have been* occurring, and their accumulating negative effects on water quality will continue to mount unless your Board begins to execute an effective regulatory program. This program must, when necessary, be independent of the California Dept. of Forestry and Fire Protection.

By law, this program must include a scientifically legitimate monitoring and reporting program (MRP), which demonstrates compliance with the Basin Plan. (CWC Section 13269) The MRP now out for review will not meet this standard. Comments submitted on our behalf by hydrologist, Dennis Jackson,[4] have all been designed to improve the scientific basis of the proposed Eligibility Criteria and MRP, so they may be effectively used to protect water quality and the beneficial uses of water.

The Initial Study notes that "CEQA and the RPFs both prohibit CDF from approving a project as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental impacts of the project." The RWQCB cannot rely on this determination, however, when it issues a general waiver because while each individual THP may have a less-than-significant environmental impact, the waiver – and therefore the project – would cover them all.

Essentially the entirety of the claims in support of the Negative Declaration are based upon simple compliance with the Forest Practice Rules and the Forest Practice Act. In describing the existing regulatory framework for THP review and approval, the Regional Board utterly fails to address the extensive record of authoritative reports and studies which demonstrate conclusively that significant adverse impacts are occurring to the beneficial uses of water. (Also, see list above)

Additionally cumulative impacts are not being addressed adequately in the THP review process, itself, or in the Initial Study, or the Negative Declaration. The Board's own TMDL guidelines are not even mentioned, much less is there an explanation of how they are being complied with.

The Report of the "Scientific Review Panel on California Forest Practice Rules and Salmonid Habitat", ("Scientific Review Panel Report" or SRP), June 1999, commissioned by, then, California Governor Wilson states:

> The SRP concluded that the FPRs, including their implementation (the "THP" process) do not ensure protection of anadromous salmonids populations. The primary deficiency of the FPRs is the lack of a watershed analysis approach capable of assessing cumulative effects attributable to timber harvesting and other non-forestry activities on a watershed scale.

The more recent "Dunne Report", A Scientific Basis for the Recognition and Prediction of Cumulative Watershed Effects, June, 2001 concurs, and highlights the point that "the THP process" continues to be deficient regarding cumulative impacts:

> We emphasize that Cumulative Watershed Effects cannot be predicted through the existing parcel-by-parcel analysis for Timber Harvest Plan applications, even if it were based on the best current understanding. Nor can future effects be predicted on the basis of short-term empirical studies of past events, *although long-term monitoring of post-*

[4] February 10, March 7, March 15, March 24 and May 18, 2005

project effects would gradually build a database for improving and facilitating modeling efforts. (emphasis added)

> Members of this committee have been told explicitly by some RPFs that, in preparing a THP, they would never conclude that a CWE is likely because of the unnecessary regulatory burden that such an admission would bring. Denials of the likelihood of CWEs are repeated regularly by applicants and reviewers, despite the widespread recognition among environmental scientists that, in the aggregate, timber harvest in coastal California has resulted and continues to result in radical alterations of water quality, habitat conditions, and perhaps flood risk.

There are also a number of specific assertions made in the Initial Study which we will now address. This letter will select a few such statements and conclusions from the Initial Study which we find to be particularly unsubstantiated and of cause for concern.

Under the first section (1) subsection "Findings" can be found this quotation:

> "In recognition of the certification and PRC Section 4582.75, these rules [Forest Practice Rules] are intended to provide the exclusive criteria for reviewing THPs. If the Director believes that there are significant adverse environmental impacts not covered in the existing rules, matters should be referred to the Board as otherwise specified in these rules."

However in the preceding paragraph other language from the Forest Practice Rules is quoted which includes Section 896 "(a) The purpose of the Forest Practice Rules is to implement the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 in a manner consistent with other laws, including but not limited to, the Timberland Productivity Act of 1982, the California Environmental Quality Act (CEQA) of 1970, the Porter Cologne Water Quality Act, and the California Endangered Species Act."

The Forest Practice Rules have been "certified" as a 'functional equivalent' (of an EIR) under CEQA. However, "[t]he USEPA has not approved the State Water Board's certification of the California Forest Practice Rules [as Best Management Practices] and administering processes for regulation of timber harvest activities on federal lands in California."[5]

The CEQA certification cannot and does not provide the exclusive criteria for reviewing THPs. The Water Board has been accorded authority under Porter-Cologne to ensure that timber harvest activities are in compliance with the Clean Water Act, and SB810 has given the Water Board effective veto power over CDF THP approval, if water quality concerns have not been adequately addressed in the THP review process. This CEQA certification of the FPRs has no direct bearing on the validity of a general conditional waiver.

It is apparent that the intent of the Initial Study is to submerge the responsibilities of the CCRWQCB beneath or within the Forest Practice Rules. This approach is not supported by the

[5] Resolution No. R3-2005-0066, Item #13, July 8, 2005 (draft)

Forest Practice Act which clearly substantiates the authority of other laws, including Porter Cologne, which must be accorded equivalent or primary authority especially in regard to the protection of water quality. As the record will show, the Forest Practice Rules are not adequately protecting water quality and the Board staff is not justified in attempting to imply that their own statutory responsibilities are somehow covered by the Forest Practice Rules and the Act.

In June 1998, the U.S. EPA stated in its report, California Nonpoint Source Program Findings and Conditions:

> Although California does have the basic legal and programmatic tools to implement a forestry program in conformity with Section 6217, these tools have not been fully effective in ensuring water quality standards are attained and maintained and beneficial uses are protected. California waters currently experience significant impacts from forestry.
>
> Thus, California will need to adopt additional management measures for forestry to address coastal waters that are not attaining or maintaining applicable water quality standards or protecting beneficial uses, or that are threatened by reasonably foreseeable increases in pollutant loadings from new or expanding forestry operations. (See Section XII, page 16)

Under section 4. Biological Resources the Initial Study marks a "Less Than Significant Impact" to (a), (b), (c), and (d), all of which refer to substantial adverse effects to species identified as candidate, sensitive, or special status [ESA listed etc.] and their habitat. These claims are simply false and cannot be substantiated. In general, for each of the categories of environmental conditions listed in the Initial Study, the Regional Board avoids evaluating the project's adverse impacts by improperly truncating the review required by CEQA

> In 1996 and 1997 the National Marine Fisheries Service ("NMFS") listed the Central California and Southern Oregon/Northern California Coast populations of coho salmon as threatened under the ESA. On August 18,1997, NMFS listed the Central California Coast and South-Central California Coast populations of steelhead as "threatened." On June 7, 2000, NMFS listed the Northern California population of steelhead trout as "threatened." In all of these rules, NMFS has repeatedly criticized the state's regulation of logging on private lands as inadequate to protect endangered fish from harm, and NMFS specifically cited these inadequacies as one of the bases for its decisions to list these species.[6]

Additionally, Joseph Blum, NMFS, stated by Declaration, DECLARATION OF JOSEPH BLUM, NMFS, 2000 [For Case No.: 00-0713-SC. I/S. District Court, Northern District of California – EPIC et al. v. A. Tuttle et al.]:

> " NMFS' review included the Board of Forestry's interim revisions to the California Forest Practice Rules which become effective July 1, 2000 (and are due to expire on December 31, 2000). NMFS concluded *that the California Forest Practice Rules with*

[6] Regulation of Logging on Private Land in California Under Governor Gray Davis, Thomas N. Lippe and Kathy Bailey, Spring, 2001

the recently adopted interim changes are inadequate to protect anadromous salmonids or provide for properly functioning habitat conditions. (65 FR 36,074, 36,084-36,085.) *Specifically, the California Forest Practice Rules with the interim changes lack critical elements necessary to avoid, minimize and/or mitigate adverse site-specific and cumulative watershed impacts on salmonid populations.*" (emphasis added)

Moreover, intermittent or seasonal streams also are important to properly functioning aquatic systems and forestry activities often destroy the ability of these streams to reduce siltation by removing trees that stabilize the associated hillslopes and by reducing the natural production of large woody debris. Although the California Forest Practice Rules purport to mandate protection of sensitive resources such as anadromous salmonids, the Rules, their implementation and enforcement do not accomplish this objective.

The above-noted 'interim' Threatened and Impaired Watershed Rules (now permanent) are those used to protect riparian areas and, thus, water quality in the Central Coast.

Under the "Findings: Less than significant Impacts" can be found the following claim associated with the Forest Practice Rules.

"These criteria include a prohibition on even-aged silviculture (clear cutting) ensuring that biological habitat is not reduced across the watershed. In addition, Section 913.8 of the FPR contains special rules specific to the Southern Sub-district of the Coast District (which includes Santa Cruz, San Mateo, and Santa Clara Counties) which specify minimum stand retention requirements, minimum basal area retention requirements and requirements for a minimum number of countable trees per acre on forested lands subject to harvest. These provisions further ensure the biological integrity of forest lands subject to harvest."

This appears to be the primary factual basis for the Negative Declaration. The Findings seem to imply that clear cutting is the culprit, and that the "Special Rules" for the Coast District are adequate to protect water quality.

However, in the absence of clear-cutting, the selection method of harvesting utilized in the Southern sub-district (Central Coast) requires construction of extensive road systems, which are kept intact and used repeatedly. Often, as your Board has heard, these roads are not maintained between harvests. Additionally, parcels are often sold and the new owners do not maintain the dirt roads. Even those logging roads which are maintained, as your Board saw on the April, 2003 Water Board field trip to lands of the City of Santa Cruz, generate sediment and sometimes fail.

The Santa Cruz County Board of Supervisors submitted the following to the Board of Forestry in 1998, as part of their "Justification Packet", requesting additional Special Rules:

The extensive network of private roads throughout the County's rural lands, most of which began as logging roads, is proof that there is no such thing as a 'temporary' road in this County. In a recent analysis of CDF approved timber harvest plans, County staff estimated there had been 113 miles of new logging roads constructed within the County over the last ten years. This is in addition to the reuse of existing truck and skid roads,

> which staff conservatively estimates at more than 400 miles. If compared to the entire existing County public road network, which is approximately 600 miles, the extent of the logging road network in the County is considerable. Given the slopes involved, the geologic setting and the use of some of these roads for purposes other than timber harvesting, *the cumulative impacts to the watershed from these unpaved roads are significant.* (emphasis added) In light of the existing severe impacts to fishery habitat and other beneficial uses of County streams, the County is alarmed at the continuing rate of new logging road construction.[7]

It should be noted that the Board of Forestry did not adopt the proposed changes to rule 926.15, Road Construction and Maintenance

It should also be noted that selection logging is common along the North Coast even though clear-cutting is permitted. The dominant source of soil erosion from THPs in all regions is, on average, considered to be from road networks. This is substantiated in the scientific literature. Certainly, soil erosion from roads is a critical source of sedimentation in the Santa Cruz Mountains:

> The county is experiencing severe environmental impacts related to sedimentation of the area's streams which has resulted in the listing of coho salmon and steelhead. A recently commissioned assessment of streambed conditions and erosion control efforts, a component of the San Lorenzo Water Quality Plan update states, 'The major sources of streambed sediment related to roads are (1) unpaved, or unimproved road surfaces, (2) continuous use of unsurfaced roads throughout the rainy season, (3) road slipouts and roadcut failures, (4) undersized, poorly maintained or improperly installed culverts and drainage structures, (5) change in use from timber harvest access to residential access, and (6) failure to maintain roads between timber harvests.' *While not the sole source of this problem, logging roads have been identified as an important contributor* (emphasis added).[8]

Local expert, hydrologist Robert Curry, in his March 8, 2005 letter to your Board states regarding conditions in the Central Coast:

> In the Santa Cruz Mountains, landslides and debris flows may supply nearly as much sediment to watercourses as do roads, but that sediment generally includes both coarse and fine-grained source materials and, with a few exceptions, *is not as detrimental to downstream turbidity as is road and sheet-wash erosion from harvest areas.*(emphasis added)

and

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[7] Santa Cruz County Justification Packet to the Board of Forestry – Proposed Rulemaking, Santa Cruz County Rules, October, 1998

[8] *ibid*

I believe it is imperative to appreciate that winter operation on unsurfaced roads actually create a drainage network that is far more erosive than those stream courses classified [Class III] by CDF.

Under section 4. Geology and Soils- Would the project:

(iv) Landslides? These are listed as "No Impact" from logging operations.
(b) Result in substantial soil erosion or the loss of topsoil? This is marked as "Less Than Significant Impact"
(c) Be located on a geological unit or soil that is unstable, or would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, or collapse? This is marked as "No Impact"

These are unsupportable claims for which no explanation is given other than references to the THP review process. During the review of THP 1-01-170 SCR by Felton CDF in 2001, an area including a debris slide chute was removed from the THP logging area upon the insistence of the affected residential owners in the path of the landslide. This obviously active slide area, which had ruptured in 1983, was not marked on the THP by the RPF (Registered Professional Forester) and was not mapped in the attached geology report by a licensed Engineering Geologist. The slide mass was buttressed by some big old trees of obvious commercial value. Specific trees in this chute were marked for falling by the RPF or his assistants.

The marking of landslides and inner gorges on THP maps is a haphazard process. Often older, or low resolution air photos, and out of date landslide maps are used that only show massive land slides. It is common for logging to take place on top of known landslides. Additionally skid trails and roads are sometimes placed across landslides. (See attached letter by Dr. Eugene Kojan from the record of THP 1-01-170 SCR.)

On a tour of a City of Santa Cruz logging site in 2003, members of the Board and staff saw a large soil mass feeding into Mountain Charlie Gulch (a fish bearing stream) which was part of an extensive, partially mapped, low gradient landslide system. There was obvious evidence of loss of top soil and massive soil erosion, both surface and sub-surface. The dislodged slide mass began on a haul road prism and ended in the creek. It was at the base of a heavily logged slope. (See attached photo, Exhibit A) It is remarkable that such first hand evidence does not appear to influence the Negative Declaration.

Under Section 8 "Hydrology and Water Quality"- would the project:

(a)Violate any water quality standards or waste discharge requirements?"
(c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river in a manner which would result in substantial erosion or siltation on- or off-site?
(d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or substantially increase the rate of amount of surface runoff in a manner that would result in flooding on or off-site?

(e) Create or contribute runoff water with would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
(f) Otherwise substantially degrade water quality?
(j) Inundation by seiche, tsunami, or mudflow?

Sub-sections (a) and (j) are marked as "no impact". Sub-sections (c) through (f) are marked as "Less Than Significant Impact". The "Findings" refer to "unregulated timber harvesting activities" that have the potential to cause the impacts listed in sections (c) through (f).

Many of the watersheds subject to timber harvest in Region 3 support streams listed as impaired for sediment under section 303(d) of the Clean Water Act. Those not listed often have not been properly assessed for impairment, or a petition for listing has simply not been brought before the Board. Referring to sub-section (a), we are mystified that the staff of Region 3 did not identity a connection between THP activity and water quality standards. During the past two years, Citizens for Responsible Forest Management (CRFM) has brought photographic evidence before the Board that would convince any reputable geologist or hydrologist that major soil erosion and sedimentation had occurred as a result of THP activity.[9] (See attached photos, Exhibit B)

Whether by individual increases in sediment discharge from a specific THP to a stream, or by cumulatively adding to total sediment load, THPs have had a substantial impact on water quality and have resulted in violations of water quality standards. It is our understanding that the sites shown in the photos may not have been visited by Regional Board staff post-harvest. This apparent neglect by staff to make post-harvest inspections is not a justification for the remarkable claim that "No Impact" upon "water quality standards" occurs or will occur in the future from THPs. Again, we contend that evidence in the record supports a "fair argument" that significant impacts may occur. Even if other substantial evidence supports the opposite conclusion, the Board nevertheless must prepare an EIR. *Friends of "B" Street v. City of Hayward* (1980), 106 Cal. App. 3d 988. *Stanislaus Audubon Society v. County of Stanislaus* (5th Dist. 1995) 33 Cal. App. 4th, 150-151

As to the other impacts upon hydrology and water quality, we have the following comments. Roads and skid trails by their physical characteristics alter the drainage patterns of a landscape. They capture surface water during intense or sustained rainfall and divert it down roads and skid trials. Water bars, critical dips, out-sloping and other types of grading attempt to reduce these effects, but roads cannot be made hydrologically invisible. There are always going to be surface erosion, rills and gullies, cut bank failures and other sources of sediment discharge from road systems. At best these effects can be limited by careful construction and maintenance. Culverts will continue to plug or wash out and wet fords will be destroyed by intense storms. In other words, there are always going to be cumulative effects upon water quality from THP roads and skid trails. Soil compaction by heavy equipment causes an increase in surface run off and sheet erosion.

[9] See also photos in Santa Cruz County Justification Packet to the Board of Forestry – Proposed Rulemaking, Santa Cruz County Rules, October, 1998 (previously submitted by CRFM on or about April 2003, into the record.)

Other hydrologic effects include loss of rainfall interception from loss of tree canopy due to timber extraction. Dr. Leslie Reed discussed recent studies at the Salmonid Restoration Federation Conference in Fortuna in March 2005 that showed that in the Coast Range up to 20% of rainfall evaporated from the intact forest canopy during rainstorms and never reached the soil surface. There are increases in soil pore pressure from increased rainfall reaching the soil surface. High soil pore pressures lead to landslides and debris slides. Loss of tree rooting strength supporting steep slopes and inner gorges and a number of other recognized hydrologic effects of timber harvest do meet the standard of "Potentially Significant Impact" when they are considered from the perspective of cumulative impacts. We do not agree with staff's unsupportable conclusions.

Simply by reading PRC § 4562.7 (Forest Practice Act) cited in the "Finding: Less-than-significant Impact", which includes measures for "Minimizing damage to stream beds or banks resulting from skidding or hauling logs through, across, or into streams by operating tractors or other heavy equipment in or near streambeds.....", it is clear that, cumulatively if not individually, a level of landscape impact being discussed far exceeds any pretence of "Less than Significant Impact" much less "No Impact" to "Hydrology and Water Quality".

Section 17. Mandatory Findings of Significance.

> (a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?
>
> (b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

"Findings: Less than Significant Impact a-c) Observation and information documented in Water Board pre/post harvest inspection reports and discharger data submitted as a condition of previously approved conditional waivers documents the protection of water quality and beneficial uses."

CRFM and the Ocean Conservancy have requested copies of inspection reports and discharger data from previously issued waivers and *have never received this information.* It is therefore most difficult to comment on information not available to us. At the time of our request, we were informed that the logbooks (with the turbidity monitoring data) had not been reviewed by staff, as the logbooks were in possession of the timberland owners or their agents. Water Quality data required to be submitted under your Board's individual waiver program (and this general waiver) consists only of "a summary of the water quality monitoring performed during the previous year". In general, it is our belief and that of the majority of experts, the turbidity monitoring

protocols established, to date, are scientifically unsupportable and relatively useless. This could change.

Staff time for timber harvest review is currently limited, and staff has not been actively conducting post-harvest inspections for sufficient duration over time to maintain with any surety that they have succeeded in "protection of water quality".

The single most important failure of the Forest Practice Rules and associated Water Quality regulation is the lack of legitimate cumulative impacts assessment. Currently there is no limit to the percentage of watershed area that can be logged over a specified period of time. In addition there is inadequate monitoring of water quality, so that it is impossible to evaluate cumulative watershed impacts from various sources including timber harvest, residential, agricultural, recreational, and general commercial impacts to water quality. Until this omission is addressed in a way that protects fish and wildlife, and water quality, no Negative Declaration or even EIR will ever be able to demonstrate compliance with laws established to protect these public trust resources. It has been understood for decades that logging activity destroys anadromous fish populations and their fresh water habitat and that it degrades water quality. The supporting documents we have submitted attest to this.

The LSA Report, CONCLUSIONS AND RECOMMENDATIONS FOR STRENGTHENING THE REVIEWAND EVALUATION OF TIMBER HARVEST PLANS, prepared for the CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION by LSA ASSOCIATES,INC., March 1990, further supports our point:

> The purpose or motivation behind the recommendations is to improve CDF's overall administration of the forest practices program and, thereby, to improve the Department's likelihood for favorable court judgments in the event of litigation.
>
> Title 14 Section 898 of the California Administrative Code requires the RPF to determine if the proposed operation will have any significant adverse impact on the environment, after considering the rules of the Board and any mitigation measures proposed in the plan. A significant, adverse impact is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the affected area including flora and fauna. To date, a THP with a positive determination of significance has been submitted in only the rarest of occasions (well less than .1% of all THPs). We were not able to uncover an instance in which CDF rejected the RPF's judgement. So in effect, *the THP has evolved into the functional equivalent of a "mitigated negative declaration", applied categorically.* (emphasis added)
>
> With respect to possible wildlife impacts, we believe the Department's tacit endorsement of the almost-categorical judgement of non-significance is both practically and factually untenable. While the forest practices rules and additional mitigations included in many THPs do substantially reduce the level of adverse impact, it is clear that the preponderance of professional and scientific biological opinion (including ours) holds that significant impacts on some species may still occur.

In contrast to the status of cumulative impacts analyses in other planning processes, of those that we examined we were not able to identify a THP in which the RPF or review team concluded that a significant cumulative impact on wildlife or their habitat would occur.(emphasis added)

Based on our above comments and the support documents we have provided, we find this Negative Declaration to be unsupported and essentially illegal.

(2) Monitoring and Reporting Program

At this time, we have concentrated the bulk of our comments toward the inadequacies of the Negative Declaration. Dennis Jackson, Hydrologist, has submitted in his May 18, 2005 separate letter, and his four previous letters[10], extensive comments on the Eligibility Criteria and the Monitoring and Reporting Program on behalf of the Lompico Watershed Conservancy, Citizens for Responsible Forest Management and the Sierra Club, Santa Cruz Group. We are in support of Mr. Jackson's suggested changes to the timber harvest waiver. which have been designed to improve the scientific basis of the proposed Eligibility Criteria and MRP, so they can be more effectively used to protect water quality and the beneficial uses of water.

In addition to the various technical concerns that Mr. Jackson has addressed, we have the following concerns and submit the following comments regarding Staff's proposal:

Re Resolution No. E3-2005-0066

17. Staff states that "local ordinances also require various controls". We are at a loss to determine what controls staff is referring to, as the courts have ascertained that only the State can determine 'how' logging takes place. Such local ordinances cannot, by law, control the conduct of timber harvest operations.

THEREFORE BE IT RESOLVED:

1(b) "The discharger [who may be anyone working on behalf of the landowner in the conduct of timber harvest activities] shall submit a Notice of Intent...." We believe there needs to be language added requiring that the NOI be prepared by the RPF who prepared the plan and signed by the timberland owner. The NOI is to be the defining document required for approval of a waiver, and must have accurate, detailed, specific information regarding the proposed timber operations. The RPF who prepared the plan is the only one qualified to prepare the NOI. And the timberland owner is the only one ultimately responsible for activities on his/her land that may discharge into the waters of the State.

1(d) states that the "Discharger shall obtain CDF approval of a THP and/or NTMP for the timber harvest activities before enrollment in this wavier takes effect." CDF approval of a 'plan' must be obtained *prior to submission of the Notice of Intent* to receive a waiver of waste discharge. The current language implies that a waiver can be applied for prior to approval of the plan. As we have seen in the past, this can lead to approval of a waiver based on incorrect information, as

[10] February 10, March 7, March 15, March 24, 2005

the conditions of the plan are not final until it is approved by CDF. The Board must have the CEQA document in hand, before considering a waiver.

The Monitoring and Reporting Program only requires submission of a 'summary' of water quality turbidity monitoring data. The public may not be denied access to this data. Therefore, submission of such data to the Water Board needs to be required.

We also contend that no THP should qualify for a waiver of waste discharge requirements, either general or individual, unless Staff has fully participated in the review of the THP, including participation in Pre-harvest Inspections. Language to this effect should be added to the Resolution.

We look forward to your serious consideration of our comments.

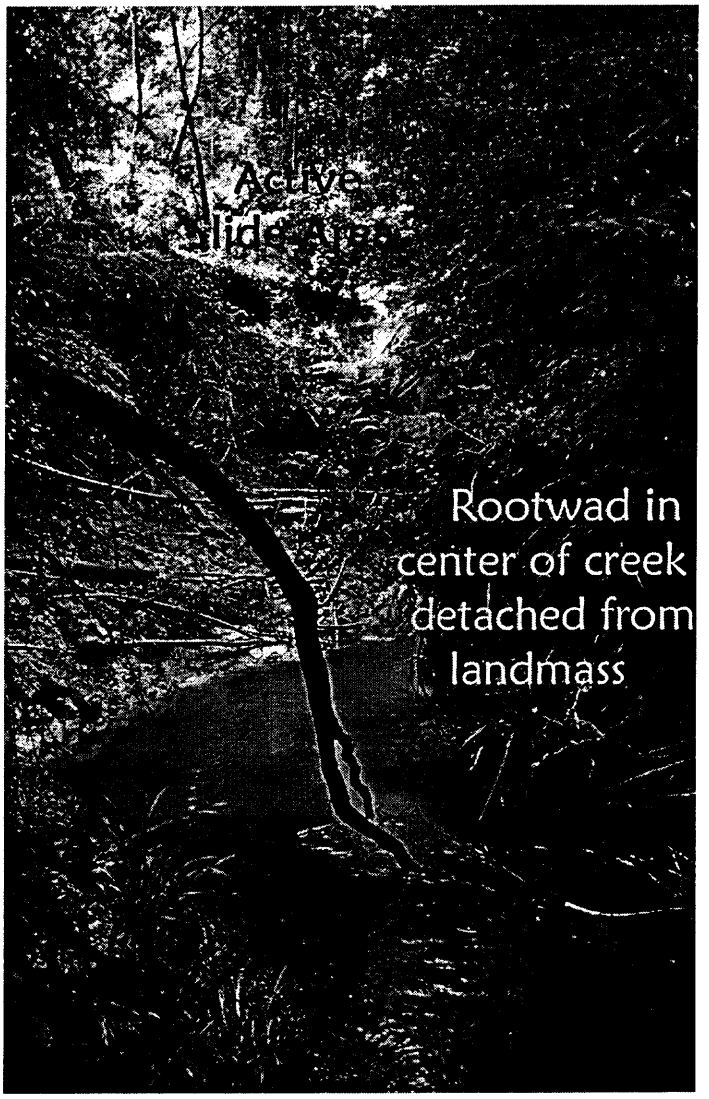
Regards,

Kevin Collins, Board President
Lompico Watershed Conservancy
P.O. Box 99
Felton, CA 95018

Jodi Frediani
Executive Director,
Citizens for Responsible Forest Management
PO Box 167
Boulder Creek, CA 95006

George Jammal
Santa Cruz Group of the Ventana Chapter
Sierra Club
P.O. Box 604
Santa Cruz, CA 95061

EXHIBIT A



Mountain Charley Creek – slide from lands of City of Santa Cruz

EXHIBIT B

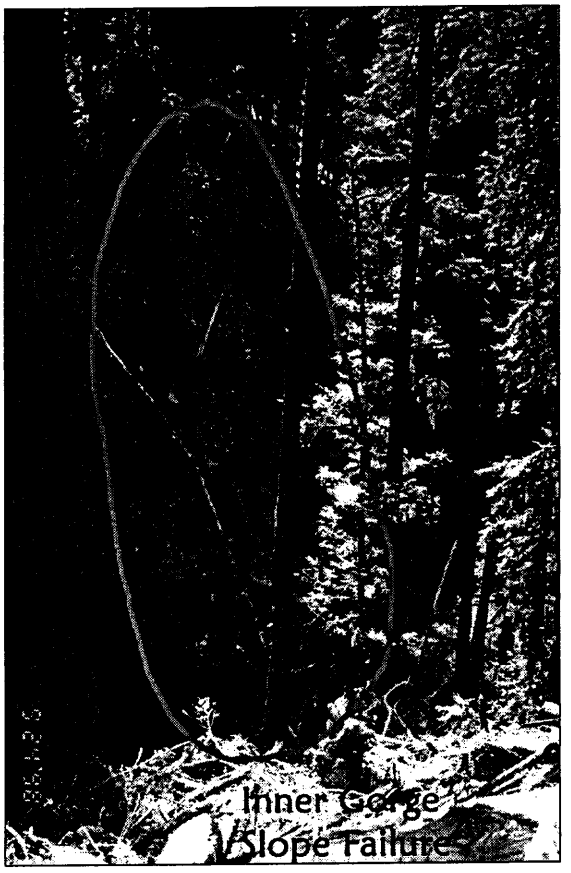


Photo 1 – Fritch Creek

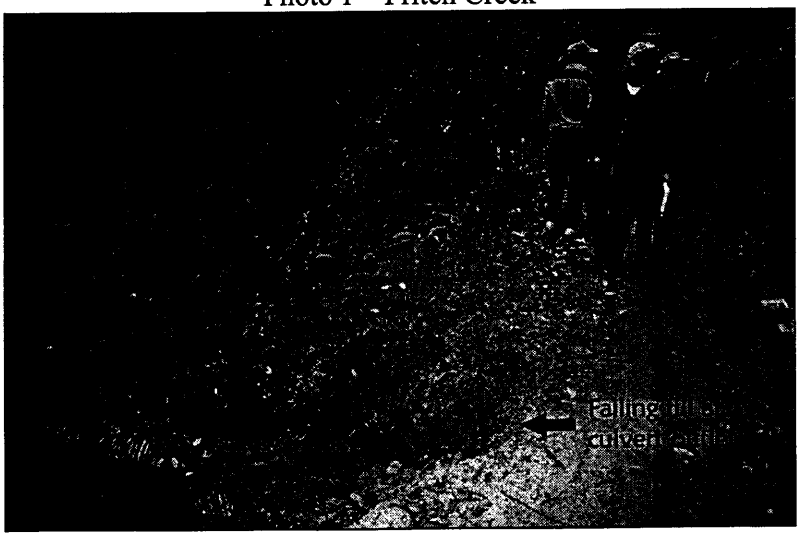


Photo 2 – Zayante Creek

EXHIBIT B - Continued

Photo 2 – Kings Creek

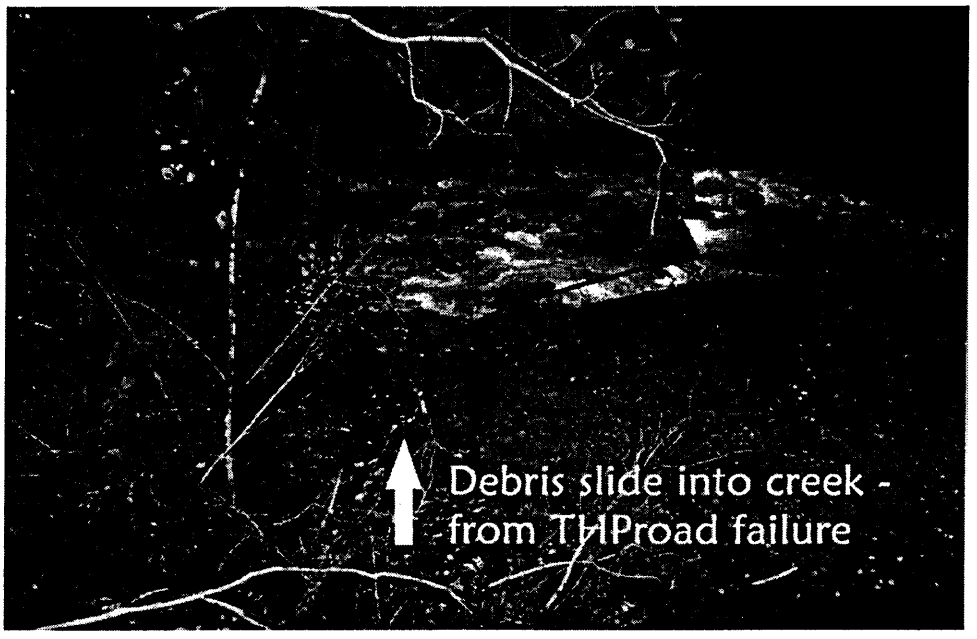


Photo 3 – Kings Creek

EUGENE KOJAN, PH.D.
ENGINEERING GEOLOGIST

1 FOX DRIVE, BOX 866 • POINT REYES, CA 94956 U.S.A. • PHONE: (415) 663-8680; FAX: (415) 663-9527

September 7, 2001

Mr. Kevin Collins
Lompico Watershed Conservancy
Box 99
Felton, CA 95018

Re: Evaluation of THP 1-01-170 SCR

Dear Kevin:

At your request in behalf of the Lompico Watershed Conservancy, I have reviewed THP 1-01-179 FCR, dated 5/24/01, with regard to its engineering-geological and hydro geological content, methologies, assumptions and conclusions. Given the watershed's known exceptionally high mass-wasting and near-surface erosional sensitivity and its very high susceptibility to accelerated erosion (see Coats, et al, 1985 – not cited in the list of Published References by Coyle or Hildreth), I focused special attention to the landslide/mass erosion and near-surface erosion processes and the watershed's probable response of the watershed to the logging operations proposed in the THP 1-01-170 SCR.

BRIEF C.V.

1959-1960 – research on soil creep/landslide mechanisms at Harvard University under Professor Karl Terzaghi and A. Casagrande. Received M.S. in Geology in 1960.

1971 – Ph.D. in Geology (U.C. Berkeley) with emphasis on geomorphology and geotechnical engineering. Thesis focused on soil creep and landslide processes and mechanisms.

1959-1972 – Research on soil creep/landslide processes at U.S. Forest Service Exp. Station, Berkeley. Installed and monitored subsurface instrumentation at approximately 15 large field sites in northern California.

1972-1982 – Served as consultant to the engineering-geological and engineering staffs of the 17 National Forests in California as Senior Engineering Geologist, U.S.F.S. Geotechnical Center, Pleasant Hill. Conducted numerous regional and local studies on the evaluation of landslide hazards and designed the stabilization measures at dozens of sites throughout California.

1970 – Appointed as the representative to the UNESCO-funded International Commission on Landslide Disasters. Investigated numerous killer landslides, including the largest landslide in recorded history (1 billion M3) worldwide at Mayunmarca, Peru (1974). Also investigated numerous landslide disasters in Peru and Nepal.

1978-1983 – Consultant to U.S. Agency for International Development on projects in Central America, Peru, Bolivia, Ecuador, Nepal and Thailand.

1975-1977 – Designed and taught graduate courses in engineering geology at the California State University, Hayward.

1980-Present – Private consultant in engineering geology. Among especially notable projects:

Honolulu, Hawaii (1995-2000) – Evaluated, instrumented and designed stabilization measures for a 30-acre landslide in Manoa involving more than 250 homes.

Luzon, Philippines – Evaluated and recommended engineering stabilization measures for the 40-mile long Bagio Road in northern Luzon, periodically closed by recurrent landslides failures.

Peru, Bolivia Ecuador, El Salvador – Investigated numerous killer landslides associated with the 1980 Ninó storms, including destruction of the only railroad serving Quito Ecuador, and the threatened, reactivated, Yungai debris slide/flow which killed more than 20,000 people in 1964.

Nepal – Evaluated and designed the stabilization for a major landslide threatening Swayambhu, a 2,000 year-old Buddhist temple in the Katmandu Valley.

Certifications:

California, Engineering Geologist #000811
Oregon, Engineering Geologist #E088

Results of my Independent Investigation of the Landslide/Erosion Hazards of the Area Included and Effected by THP 1-01-170 SCR (dated May 24th, 2001

Methodology

The landslides contained within the T.H.P. and in the surrounding area and downstream of the T.H.P. were mapped on very high resolution, black & white, stereo air photos taken by WAC Corp on 10/23/00. The respective stereo photo series 28/90, 28/89, 28/88 and 28/87 were photographically enlarged to a scale of 1:4,000 (1":333 ft.) and further ocularly enlarged to between 1.5x and 4.5x. At this scale and with these photos, objects less and 3' in diameter were and examined in stereo. The entire THP has been mapped on 1:4,000 photo 28/89..

It should be noted that both I, and Dr. Coats (hydro-geologist), were denied permission by the landowner to participate in the P.H.I on both the 10th and 18th of July 2001.

David Hope, a R.P.F. and California Certified Soil Erosion and Sediment Control Specialist, who did participate, provided me an opportunity to review a high-resolution digital video with voice-over comments recorded during the P.H.I. trip on July 18th, 2001. This record provided very useful close-up images and information which confirmed my own large-scale air photo observations and conclusions.

By utilizing stereo air photos of the scale I employed, four times to five times (4x to 5x) larger than the stereo photographic scale used by Coyle in preparing his report for the Lompico Water District and for the T.H.P., it was possible to define the true complexity of the so-called "deep seated" landslides delineated on the Coyle map. Not only is the total area underlain by landslides far greater than are indicated on the Coyle map, but the large, so-called deep-seated landslides actually consist, particularly in their toe zones, of a complex of numerous smaller, shallower and more vulnerable (to logging) secondary and tertiary landslides. This fact is most typically ignored on the Coyle map, where simply-delineated so-called "deep seated" landslides are arbitrarily assigned to two "activity" classes – "dormant" or "static."

Furthermore, within a zone often extending up to 300 ft. from the stream channel toward which the "deep seated" landslides are Inexorably advancing, the larger landslide toe zones typically evolve into a complex of secondary and tertiary of partly superimposed landslides, smaller and shallower developed most densely in the mid to toe zone of the primary slide mass. These shallower, smaller landslides occur most frequently in the largely cohesionless materials of the highly fractured, displaced and remolded Miocene Vaquerous sandstone and Zayante sandstone formations. They include, most abundantly, debris slides and debris flows and their <u>own</u> deposits – debris fans, cones and aprons extending into stream channels where they are periodically scoured and removed by the stream under high discharge conditions.

As David Hope's digital video documents, such deposits are often critically stabilized by the trunks and root networks of the hardwood-dominated trees within the broad stream marginal zone, extending upslope 200 to 300 feet from

the stream channel. Details of the morphology of these secondary and tertiary landslides were also frequently observed on the 1:4,000 stereo air photographs, further optically enlarged by the stereoscope oculars between 2x and 9x.

At the completion of the stereo air photo mapping, it was obvious that the area of the T.H.P. that is underlain by landslides is 3x to 4x the area landslide area indicated by Coyle's map in p. 98 in the 5/24/01 T.H.P.

Conclusion

Due to Coyle's assumptions and methologies, the area indicated as being underlain by landslides (including his "debris slides," "dormant" landslides and "static" landslides) were systematically and significantly understated the area actually underlain by landslides.

The Coyle map, with the exception of a relatively minor number of "debris slides," fails to distinguish the mapped landslides by type even where his chosen map scale would permit further classification by landslide type. Delineated large landslides are simply assumed to contain an undefined body of "deep-seated material with no distinguishing morphological or structural features. These slides are erroneously assumed not to contain secondary or tertiary slides of much shallower depth and higher vulnerability to logging-related destabilization.

Coyle has not even attempted a specific type classification of recognized landslides, such as rockslides or more specifically as block glide or disintegrating rock slides, rotational or translational-rotational or debris flows, for example. According to Coyle's classification scheme, slides are either debris slides or else are "dormant" or static.

A classification based on the failure to find open cracks is a shocking example of the application of "negative evidence." Coyle then introduces his personal concept of "relative stability" (p. 106, ¶ 2). To quote:

"Dormant slides are judge (sic) to be relatively stable but could become reactivated under current climatic conditions or because of erosion processes at the toe of the slide or other natural or man-induced activity. Static landslides are judge (sic) to be relatively stable and not likely to become reactivated under existing climatic conditions..."

" Debris slides are relatively very small failures involving usually only the soil and perhaps some weathered bedrock."

P. 106, ¶ 3, line 1: "The large deep-seated slides involve significant volumes of earth materials but are inactive."

P. 106, ¶ 3, line 6: "About three dozen debris slides were mapped occurring within the watershed of the Burch Parcel. However, it should be noted that they were observed occurring over a period of 46 years which would suggest a recurrence of less than one slide per year."

This amazing conclusion is based on an inspection of vegetation –obscured, small-scale air photos followed by a "reconnaissance" claimed to involve only "some main roads and stream courses." Here again, Mr. Coyle invokes the negative evidence argument: If he did not find cracks or active debris slides during a "reconnaissance" inspection in the summer of 1999, they are presumed not to be active slides during the recurrently intense winter rainstorms characteristic of the region.

Mr. Coyle apparently fails to fully appreciate the extremely episodic pattern of intense storm-related erosion processes or the role of intense storm periods in shaping the Coast Range landscape. Presumably, if he did not personally observe runoff along 1st order stream valleys (equivalent to Class IV, V or VI in CDF parlance – if there were such a designation) such valleys and the enormous volume of debris which had to have been transported to carve such valleys in a mere 20,000 years should not have occurred.

On P. 110, ¶ 2, Mr. Coyle makes this incredible statement: "Based on our review of aerial photographs and our field reconnaissance it appears that, aside from an occasional debris slide and erosion of the channel and bare rock slopes, there are few sediment sources in the Lompico headwaters on the Burch parcel." And p. 106, ¶ 3 "Over-all sediment sources are not abundant and contributions to Lompico Creek and tributaries appears to be low within the Roger Burch parcel."

Since the streams within the THP have steep gradients, are deeply incised, display steep inner gorges, and steep valley sides covered with generally very thin, immature, and generally cohesionless less soils, an obvious question should have occurred to and responded to by Mr. Coyle – what processes formed and is now forming this steep, mountainous landslide-dominated landscape?

Contrast, for example, the observations of Dr. Robert Coats* (July 16, 2001), an internationally-recognized hydrogeologist:

> "Lompico Creek differs from streams of the north coast in terms of its interaction with hill slopes, but the watershed is nonetheless a very actively eroding terrain. Much of the mature timber grows on over-steepened inner gorge slopes that are prone to shallow-seated debris slides. In addition, there are numerous, large, deep-seated complex slides. The long term average sediment yield in the upper Zayante Creek

* Coats, R.N., L. Collins, J. Florsheim and Dr. Kaufman (1985); "Channel Change, Sediment Transport and Fish Habitat in Coastal Streams", Environmental Management 9(1): p. 35-48.

basin has been estimated to be about 3,000 tons/mi2/yr, about 75% of the pre-1964 sediment yield rate of the Eel River at Scotia. In 1982, inner gorge debris slides in the Lompico Creek watershed contributed sediment to the creek at the rate of 11,000 tons/mi2."

It should be noted that the Eel River is internationally recognized as one of the most sediment charged streams in the world!

Conclusion

Mr. Coyle's simplistic mapping of large, so-called "deep-seated slides" as uni-types introduces a very significant bias of under-reporting the very large number of small, relatively shallow slides (rotational, debris slides, debris flows, debris coves, fans and debris aprons) which typically dominate the down-slope toe and marginal zones of most of the so-called "deep-seated slides" he has mapped as unitypes. His arbitrary choice of scale, methodology and of slide classification has resulted in a very significant under-reporting of the abundant sources of sediment immediately available to streams in flood.

His resulting interpretations and conclusions are entirely subjective and are without a demonstrated scientific basis. His report is not simply subject to serious random errors, but leads systematically to a bias of under-reporting the severe erosion hazard of the lower valley slopes and inner gorges. It is these zones that are extremely susceptible to destabilization and erosion during recurring periods of intense 48-hour and 72-hour storms.

"Activity" vs. "Stability" vs. "Factors of Safety"

As a specialist in slope stability evaluation and stabilization for over 40 years, I have personally instrumented and monitored more than 100 major landslides all over the world. I have also visited an even larger number of intensively-instrumented and monitored very large landslides of a wide range of types.

Most large landslides which have been instrumented by inclinometers, extensometers and or by precise level or theodelite transects and are known to be active and subject to continuous creep deformation rarely display obvious patterns of tension cracks or shear surfaces indicative of recent movement unless they disrupt man-made datum such as road pavement, pipelines, building foundations, etc., even though their overall morphology should "landslide."

Contrary to elementary textbook versions, large landslides undergoing known rapid creep deformation (measured in inches per year) between catastrophic surges measured in tens of feet per year usually occur in mountainous terrain with clear evidence of rapid down-cutting and widening of inner gorges and

episodic, intense precipitation periods which are capable of removing their toes as they progressively continue to be displaced down slope toward the streams they feed. Unless there is clear evidence of long-term significant stream aggradation sufficient to support the toe of the slide, it is simply absurd, or wishful and/or myopic thinking to presume, in such terrain, that ANY landslide feeding into a stream with an inner gorge is either truly "dormant" or even, with a wilder stretch of scientific credulity, "static." The burden of proof must rest with the claim of such an extremely unlikely possibility.

Whatever the strength of the rock mass was a few minutes or seconds before the initial failure (whatever its proximate imagined cause), after failure the strength of the rock mass along its basal shear surface has irretrievably, and been reduced to its "residual strength," commonly as low as 40% to 60% of its peak strength. Since 1964, Northern California has had a minimum of sic (6) storms of exceeding the 90th percentile (in terms of 48 to 72 hour intensities) and a recurrence interval of more than 100 years. Transient surges in fracture fluid pressures are the triggering event, and man's adverse impact on slope stability by provoking increases in stream discharge and often results in large slide displacement triggered by small piecemeal failures. Logging within the inner gorges has demonstrably provoked an acceleration in slope failures with massive increases in erosion sedimentation.

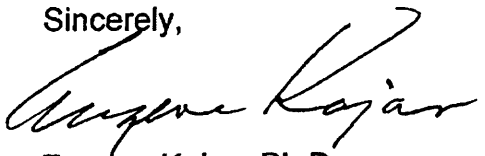
In a real world geological landscapes with progressively deepening and widening inner gorges and no evidence of long-term stream aggradation which might support the adjacent toes of slopes, and advanced widespread incision of headwater stream reaches, there is no rational scientific basis to assume "dormancy" or, even more exotically, a cessation of movement ("static") based on a simplistic negative evidence – a failure to find evidence of movement.

In summary, the headwaters of Lompico Creek display clear and unambiguous physical, morphological evidence of rapid incision of its channel into bedrock. Its progressively-widening inner gorge has advanced upstream to involve 3rd and 2nd order streamsin inner-gorge erosion. There is zero evidence of a reversal of this long-term erosion cycle which might lead to aggradation of channels. By progressive removal of the toe mass of landslides feeding into the inner gorge zone the stability of the valley sides, including especially the large landslides, have been progressively reduced.

By presuming, as Coyle's map index and text do, that all of his mapped, so-called "deep-seated" landslides (their toes all extend into stream channels) are "dormant" and even "static" and thereby possess an implied marginal factor of safety under frequently recurring very intense 48 and 72 hour winter rainfall intensities (there have been at least tis such storms exceeding "100 year recurrence intervals" since 1964) is an unsupported fantasy. To then suggest, as Coyle does, that this imagined marginal stability factor may be exploited by logging without severe negative environmental consequences is technically very

misleading and environmentally irresponsible. His presumptions are completely without any scientific or geotechnical basis.

Sincerely,



Eugene Kojan, Ph.D.

EK/dpm

Attachments