BIG CREEK

"Growing Redwoods for the Future"

August 30, 2010

Jeffrey Shu
State Water Resources Control Board
Division of Water Quality
P/O/ Box 100
Sacramento, CA 95812-0100

RE: 2012 California Integrated Report, Region 3

Dear Mr. Shu,

Big Creek Lumber Company appreciates the opportunity to comment on the 2012 California Integrated Report. Our comments are specific to 303(d) listed watercourses within the jurisdiction of the Central Coast Regional Water Quality Control Board (CCRWQCB).

We strongly recommend that San Vicente Creek (Santa Cruz County) be de-listed. San Vicente Creek is currently listed as impaired, with sedimentation/siltation cited as the pollutant. The source of the pollution is listed as unknown.

As you are aware, your Board listed San Vicente Creek on October 25, 2006. At that time, the information available to your Board and staff included three disconnected winter months of turbidity data; ninety-one individual data points. It is our understanding that staff has now received a turbidity data record for San Vicente Creek that encompasses 108 months and 3,155 individual data points.

In reversing their recommendation to de-list San Vicente Creek during the August 4, 2010 Board hearing, staff commented that "Not all data was included in the submittal to the Water Board" and "Data did not include QA (quality assurance)". We trust that staff has now had the opportunity to establish quality assurance and has sufficient data to make a listing determination. The entirety of the 108 months of San Vicente Creek turbidity data was collected by the County of Santa Cruz as part of the Davenport Water Treatment Plant monitoring. In all likelihood, this amount of data dwarfs the turbidity data available and analyzed during the sediment/siltation listing determinations of other stream segments within Region 3.

Using the procedural calculations clearly outlined in Water Quality Control Policy Section and Table 3.2, it is apparent that San Vicente Creek does not meet the threshold for listing. It has been suggested by a member of the public that summer months should be disregarded when considering turbidity data. However, this is not the policy or procedure established by your Board.

It has also been argued that there are no criteria for measuring sedimentation/siltation and that turbidity data is inappropriate surrogate for this purpose. Your staff refuted this assertion in their June 12, 2010 Responses to Comments:

> *There is currently no practical method to directly measure the full range (submicron to 2 mm) of suspended sediment concentration (SSC) in the field. Turbidity can be of great benefit as an auxiliary measurement*
>
> *While the relationship between SSC and turbidity depends on several factors, the relationship is typically nearly linear, with low variance. There is growing recognition (Glysson & Gray, 2002) that this sediment surrogate has the potential to improve sediment load estimation.*
>
> *Staff agrees that turbidity data are inadequate to determine if an adverse biological response (specifically sedimentation) can be determined, especially when compared to the Drinking Water MCL of 5 NTUs. Staff has evaluated the habitat typing data in the 'Stream inventory report: San Vicente Creek' (ref88) which includes visual estimates of cobble embeddedness or the percent of the cobble that is buried in fine sediment in pool tail-outs. Based on the estimated percent embeddedness, the report states that 57 of 70 pool tail-outs had embeddedness rating greater than 50%. However, these data are inadequate to stand alone as the basis for placing San Vicente Creek on the 303(d) List because a) there is no evaluation guideline that meets the requirements of the section 6.1.3 of the Listing Policy and b) there is no QA documentation associated with the report that summarized these data as required in section 6.1.4 of the Listing Policy. Staff recommend removal of San Vicente Creek from the 303(d) List for sedimentation based on the available data and Listing Policy Section 4.*

Other arguments have been submitted in support of retaining the San Vicente Creek listing. These include the red-herring argument that the city of Davenport drinking water supply is under a boil order notice because of high turbidity levels. While a portion of Davenport's water comes from San Vicente Creek, the turbidity issues associated with the boil order notice have nothing to do with the upstream conditions of the watershed. The Davenport water treatment facility is decades old, and when the state standards for acceptable drinking water turbidity levels were tightened several years ago, the treatment plant was incapable of filtering the water to this new standard. Region 3 staff and Board are fully aware of this fact.

In the absence of a practical method to measure the full range of suspended sediment, both the State Water Resources Control Board and the CCRWQCB have adopted a policy of analyzing turbidity data to determine whether sediment/siltation levels warrant 303(d) listing for that pollutant. If the substantial existing turbidity data for San Vicente Creek does not meet or exceed the level required for listing, then the creek should be de-listed.

Big Creek Lumber Company also recommends changes to other watercourse listings. An examination of Region 3 watersheds that are 303(d) listed as impaired for sediment/siltation, with silviculture (timber harvesting) cited as the source, include the following:

Bear Creek (6.3 miles)
Boulder Creek (7.6 miles)
Branciforte Creek (5.8 miles)
Kings Creek (4.4 miles)
Love Creek (3.8 miles)
Mountain Charlie Gulch (3.9 miles)
Newell Creek (3.5 miles)
Zayante Creek (9.2 miles)

Big Creek Lumber Company recommends that silviculture be removed as the cited source of sediment/siltation pollution on all watercourses where single-tree selection silviculture is the statutorily mandated timber harvest methodology. This would include all eight stream segments listed above which cite silviculture as the designated source. We believe this change is warranted for a number of reasons:

Statutorily mandated protections associated with legally conducted timber harvesting in Region 3 that directly benefit water quality include, but are not limited to: Riparian setbacks and canopy retention standards, retention of potential large woody debris (LWD) conifer trees, equipment limitation and exclusion zones, road maintenance and inventory programs, forensic monitoring and data collection associated with water quality permitting requirements, only single-tree selective harvesting is allowed, limited operating season, extremely limited winter operations, site preparation is not conducted, roads are seeded and/or straw mulched, roads are rocked in high risk areas, skid trails are seeded and/or slash packed mechanically or by hand, only designated skid trails are used, high lead, skyline, and helicopter yarding methods are utilized when appropriate to minimize soil disturbance, etc.

Additionally, all timber harvest plans in Region 3 have been subject to either Individual or General Conditional Waivers of Waste Discharge since January 2003. At the July 10, 2009 CCRWQCB public hearing, staff submitted a report (attached) based on a thorough analysis of nearly six years of administering Conditional Waivers of Waste Discharge for timber harvesting activities. This analysis included a review of water temperature, photo point and turbidity grab-sample data collected as part of the waiver permitting process. In this report, "Staff found that timber harvest operations are generally not or only minimally impacting water quality".

In light of this analysis, staff recommended to their Board that the General Conditional Waiver of Waste Discharge requirements for timber harvesting activities be modified to reflect staff's determinations. The CCRWQCB Board concurred and adopted the modifications.

In 2009, the California Board of Forestry and Fire Protection passed the *Threatened or Impaired Watershed Rules 2009* package. This rule package had been collaboratively vetted by both the California Department of Fish and Game and the California Department of Forestry and Fire Protection (CalFire). A joint letter dated June 18, 2009 from both of these agencies (attached), stated the following relative to timber harvesting practices within Region 3:

> *With respect to the Southern Subdistrict of the Coast Forest District, we propose an alternative for Class II watercourse prescriptions.* ***The specific rules that currently apply to this region reduce the potential impacts of individual harvest plans and the cumulative intensity of harvesting at the planning watershed scale. The Departments' believe, based on regional data, the impacts are lower in comparison to other forested landscapes in California.*** *The Departments' support for the alternative prescriptions for*

Class II watercourses in the Southern Subdistrict are predicated on the adoption of Class I watercourse and lake protection zone prescriptions described in Attachment 1. (emphasis added)

Big Creek Lumber Company feels that it is insufficient to designate specific sources for pollutants based solely on the presence of an activity, in this case silviculture (timber harvesting). As previously noted in this correspondence, there is considerable evidence that the single-tree selective timber harvesting, as practiced in the Southern Subdistrict of the Coast District, is particularly protective of water quality. Conversely, we are not aware of any site-specific data which demonstrates that modern timber harvesting practices, as conducted in Region 3 for the past forty years, have deposited sediment/siltation in any manner deleterious to water quality. Interestingly, there are watersheds in Region 3 that experience consistent periodic timber harvesting and are not 303(d) listed as impaired for sediment/siltation.

Pending any future collection and analysis of quantitative scientific data that might establish a nexus between timber harvesting activities and verifiable harm to water quality, we ask your Board to remove silviculture as a cited source of sediment/siltation pollution on all stream segments in Region 3.

Thank you for considering our comments. Please do not hesitate to contact us should you have questions.

Sincerely,

Bob Berlage
Communications Director

Cc: Lisa McCann, CCRWQCB
Mary Adams, CCRWQCB

Encl. CCRWQCB Staff Report, July 10,2009
CalFire – Department of Fish and Game Joint Letter, June 18, 2009

California Regional Water Quality Control Board
Central Coast Region

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Linda S. Adams
Secretary for
Environmental Protection

Arnold Schwarzenegger
Governor

May 18, 2009

TO: Timber Harvest Program Interested Parties List

Dear Interested Party:

NOTICE OF PUBLIC HEARING FOR RECOMMENDED MODIFICATIONS TO THE REGULATION OF TIMBER HARVEST ACTIVITIES IN THE CENTRAL COAST REGION

Water Board staff first distributed this notice on April 24, 2009. Unfortunately, the staff report was omitted from the April 24 notice. Please note that this revised notification packet now includes the staff report and the deadline for public comments has been revised to June 1, 2009.

Staff reviewed compliance history of timber harvest operations, water quality impacts from reporting and field observations and thoroughly analyzed temperature and turbidity data. Staff found that timber harvest operations are generally not or only minimally impacting water quality. Additionally, Water Board staff incurred budget cuts in 2008 requiring a reduction of staff efforts on lower priority activities. Therefore, Water Board staff recommends modifications to the way the Water Board regulates timber harvest activities. Staff's goal is to continue to regulate timber harvest activities in the most efficient manner possible to protect water quality.

The Board will hold a public hearing to consider public comment and consider approval of the recommend modifications at 8:30 a.m. on Friday, July 10, 2009, at the Watsonville City Council Chambers located at 275 Main Street, 4th Floor, Watsonville, California.

Persons wishing to comment on the recommended modifications should submit comments in writing to the address above no later than **June 1, 2009**. Comments received by June 1, 2009 will be noted and addressed in the staff report to the Water Board for the July 10 Meeting when it is distributed to the public prior to the July 10 Meeting. Comments submitted after June 1, 2009 may not be noted or addressed until the July 10 Meeting. However, all comments will be noted and addressed in the staff report or at the July 10 Meeting.

Interested persons are invited to attend the July 10 Meeting to express their views on the recommended modifications. Persons making presentations should confine their statements to this issue. For the accuracy of the record, all important testimony should be submitted in writing. Oral statements should be brief to allow all interested persons time to be heard.

Dischargers currently implementing a Monitoring and Reporting Program (MRP) associated with the General Conditional Water of Waste Discharge Requirements –

Timber Harvest Activities in the Central Coast Region Order No. R3-2005-0066 or an Individual Conditional Waiver of Waste Discharge Requirements for a Timber Harvest Plan or Nonindustrial Timber Management Plan must continue to comply with the requirements of their respective MRPs. The recommended modifications to the regulation of timber harvest activities outlined in the staff report are subject to modification and approval by the Water Board. Any Discharger that suspends or otherwise modifies their compliance with their current MRP in anticipation of the Water Board approving the recommended changes subjects themselves to potential enforcement action.

The staff report describing the recommended modifications and attachments are enclosed. The staff report, related documents, and all comments and petitions received may be inspected and copied at the office of the Water Board, 895 Aerovista Place, Suite 101, San Luis Obispo, California, on weekdays between the hours of 8:00 a.m. and 5:00 p.m. Please direct comments and questions to **Julia Dyer at (805) 594-6144** or Lisa McCann at (805) 549-3132.

Please bring the foregoing to the attention of any persons you know who may be interested in this matter.

Sincerely,

for Lisa M McCann

Roger W. Briggs
Executive Officer

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STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF JULY 10, 2009

ITEM NUMBER: __

SUBJECT: RECOMMENDED MODIFICATIONS TO THE REGULATION OF TIMBER HARVEST ACTIVITIES IN THE CENTRAL COAST REGION

SUMMARY

The Central Coast Regional Water Quality Control Board (Water Board) has been regulating timber harvest activities intensively since July 2005, when the Water Board adopted Order No. R3-2005-0066, the General Conditional Waiver of Waste Discharge Requirements – Timber Harvest Activities in the Central Coast Region (Attachment 1). Since that time, Water Board staff has gained a better understanding of timber harvest activities, their impact on water quality, and the most appropriate methods for regulating them.

Staff reviewed compliance history of timber harvest operations, water quality impacts from reporting and field observations and thoroughly analyzed temperature and turbidity data. Staff found that timber harvest operations are generally not or only minimally impacting water quality. Additionally, Water Board staff incurred budget cuts in 2008 requiring a reduction of staff efforts on lower priority activities. Therefore, Water Board staff recommends modifications to the way the Water Board regulates timber harvest activities. Staff's goal is to continue to regulate timber harvest activities in the most efficient manner possible to protect water quality. The following recommended modifications assume an estimated 0.4 PY (personnel year) allocation for technical staff to manage the timber program and an allocation of 20 hours per week for one student intern to assist technical staff; previously staff spent about 1 PY on timber harvest program activities.

These recommended modifications, if adopted by the Water Board, will apply to all future waiver enrollees, as well as retroactively to all Timber Harvest Plans (THP) and Nonindustrial Timber Management Plans (NTMP) currently enrolled under an Individual or General Conditional Waiver in the Central Coast Region.

HISTORY

On October 10, 1999 the California State Senate adopted Senate Bill 390 (SB 390) amending California Water Code §13269 by requiring that existing waivers expire on January 1, 2003. This included the Water Board's existing waiver for timber harvest activities, circa 1983, which waived "Timber harvesting operating under approved timber harvest plan." After January 1, 2003 new waivers of waste discharge requirements for specific types of discharges had to be reconsidered and, if appropriate, be renewed every five years.

Prior to SB 390 the Water Board regulated timber harvest activities by participating as a review team member for the California Department of Forestry and Fire Protection (Cal Fire) timber harvest review process. Between January 1, 2003 and July 8, 2005 the Water Board issued Individual Conditional Waivers of Waste Discharge Requirements to all Dischargers[1] seeking to conduct timber harvest activities within the Central Coast Region.

On July 8, 2005 the Water Board adopted the General Conditional Waiver of Waste Discharge Requirements - Timber Harvest Activities in the Central Coast Region Order No. R3-2005-0066 (General Conditional Waiver) and associated Monitoring and Reporting Program (MRP). The requirements for timber harvesting specified in the General Conditional Waiver are equivalent to other general waivers and comply with the California Water Code §13269. As part of the MRP, the Dischargers are required to conduct visual, temperature, and turbidity monitoring within the harvested area.

DISCUSSION

Recommended Modifications

All of the following recommended modifications fall under one of two major categories; 1) General Conditional Waiver Enrollment Process, or .2) Monitoring and Reporting Program Requirements. Changes to the General Conditional Waiver Enrollment Process and Monitoring and Reporting Program are explained in the following discussion and are summarized in the attached table (Attachment 2).

General Conditional Waiver Enrollment Process

Under the current General Conditional Waiver enrollment process, Water Board staff reviews all proposed timber harvest plans within the Central Coast Region as they are submitted to Cal Fire. This process yields small amounts of water quality protection in proportion to the amount of time staff spends on the task of reviewing all plans. Therefore, to more efficiently use Water Board staff's time, staff recommends that instead staff review only the highest priority plans as they are submitted to Cal Fire. Plans categorized by the Discharger as Tier IV by the Eligibility Criteria and / or plans located within water bodies that are listed on the Clean Water Acts Section 303(d) list or identified as impaired for sediment or temperature in an established TMDL will be considered highest priority. Staff will also rely on other review team members and the public to assist in determining the priority of a particular plan.

Since the adoption of the General Conditional Waiver in July 2005, Water Board staff has attended a majority of Cal Fire's preharvest inspections. When Water Board staff was not available to attend the Cal Fire inspection, staff inspected the plan area later with the forester or land owner. Categorically attending all Cal Fire preharvest inspections again yields small amounts of water quality protection in proportion to the amount of time spends on preharvest inspections. Therefore, to more efficiently use Water Board staff's time, staff recommends modifying the frequency of attendance at Cal Fire preharvest inspections. Attendance will be weighted toward Tier IV plans and other high priority plans. This should equate to approximately three to five Cal Fire

[1] Throughout this document "Discharger" means the landowner and anyone working on behalf of the landowner in the conduct of timber harvest activities including monitoring.

preharvest inspections per year. Water Board staff will also prioritize inspections towards active harvest, postharvest, complaints, and violations inspections for high priority plans as well and random inspections for all plans enrolled under an Individual or General Conditional Waiver.

Under the current process, once a plan is approved by Cal Fire, the Discharger submits a detailed Notice of Intent (NOI) (Attachment 3) to request enrollment under the General Conditional Waiver. Staff then conducts a detailed review of the NOI to determine if the information provided is accurate and complete. Staff then runs the complete NOI information through the Eligibility Criteria to determine the appropriate monitoring tier level. This process is very intensive, time consuming, and yields little to no water quality protection. Additionally, information requested by the current NOI is contained in the harvest plan.

Staff recommends revising this process, requiring the Discharger to run their plan under the Eligibility Criteria prior to the Cal Fire preharvest inspection. If the plan is categorized as a Tier IV by the Eligibility Criteria, the Discharger must notify Water Board staff. Under the current process Water Board staff determines a plan's monitoring tier level based on the Eligibility Criteria after the preharvest inspections and after the plan has been approved by Cal Fire. Revising the process to require that the Discharger determines tier ranking in advance of the Cal Fire preharvest inspection allows staff to prioritize attendance at Cal Fire preharvest inspections as described above. Advance knowledge of a plan's tier level also gives staff several months of lead time, instead of weeks, to prepare an Individual Conditional Waiver for Board Meetings. This will minimize staff delays and backlogs enrolling plans and preventing harvests from starting when scheduled. Upon approval of the plan by Cal Fire, the Discharger will fill out the revised NOI (Attachment 4) and submit it to the Water Board. The revised NOI is a two page application providing critical contact information, landowner signature certifying that the information they provided is true and correct, and the monitoring tier with eligibility criteria worksheets attached. This revised NOI is consistent with NOIs in other regions.

Unless the Eligibility Criteria categorizes a timber harvest plan under Tier IV monitoring, the plan will be automatically enrolled under the General Waiver upon receipt of a complete NOI. Plans categorized as Tier IV monitoring will still need to seek enrollment under an Individual Conditional Waiver.

Monitoring and Reporting Program

Based on the current MRP, all plans categorized as Tier I must conduct Cal Fire Forest Practice Rules compliance monitoring, forensic monitoring, and prepare a Road Management Program. Plans categorized as Tier II must conduct all the monitoring requirements of Tier I plus conduct visual and photo monitoring of timber harvest infrastructure. Plans categorized as Tier III must conduct all the monitoring requirements of Tiers I and II plus storm-event based turbidity and summer temperature monitoring. Plans categorized under Tier IV are not eligible for a General Conditional Waiver and must seek coverage under an Individual Conditional Waiver.

The revised MRP is applicable to Tier I – III plans and relies upon adaptive management, compliance with Cal Fire's Forest Practice Rules, visual inspections, and forensic monitoring. Dischargers will still be required to notify the Water Board of a violation, sediment releases, drastic change in site conditions, or events that trigger

forensic monitoring. The recommended revisions are contained in a strike-out and underline version of the MRP included as Attachment 5.

Visual Monitoring

The current MRP outlines a visual inspection program that mandates a minimum of three inspections, triggered by storm-events, during the active harvest period through one year after harvest is completed. Then, for the time period of two through five years after harvest is completed, the visual inspection requirements are consistent with the Road Management Program developed by the Discharger and approved by the Water Board's Executive Officer. A majority of Road Management Programs submitted to the Water Board do not include specific triggers for when the Dischargers should inspect the timber harvest areas during the years two through five monitoring period. Instead the Dischargers have asked Water Board staff to rely on the Discharger's best professional judgment for visual inspection frequency. This means that a Discharger may not inspect the harvest area even once during a given monitoring year. This is not protective of water quality.

The revised MRP replaces the need for the Discharger to develop a Road Management Program by specifying the visual inspection locations and frequency for years two through five. The Discharger, under the revised MRP, will be required to inspect all existing and newly constructed infrastructure. This includes, but is not limited to, the full length of roads, watercourse crossings, landings, skid trails, water diversions, watercourse confluences, known landslides, and all mitigation sites (as documented in the Cal Fire approved THP OR NTMP) in the plan area.

The revised MRP retains the same storm-event based driven inspection frequency as the current MRP, but, instead of the Discharger developing a Road Management Program, the Discharger will be required to inspect the plan area once during the dry season and once during the wet season during years two and three. Then during years four and five the Discharger is required to conduct a visual inspection once during the dry season, to prepare the property for the winter, and once during the wet season in the event of a storm that produces four inches of rain or greater within a twenty-four hour period.

The revised visual monitoring requirements continue to rely on adaptive management for the protection of water quality. If at any time during a visual inspection a Discharger discovers a failed management practice they must take immediate action to repair failed crossings, culverts, roads, and other sources of sediment.

This revision provides the Dischargers with specific visual monitoring intervals, guarantees that the Dischargers will inspect the plans areas at least once a year, and alleviates Water Board staff from the intensive and time consuming requirement to review and provide written approval for individual Road Management Programs which have been consistently inadequate.

The revised MRP also specifies that the visual monitoring requirements represent the minimum amount of inspections for a harvest plan area to comply with the waiver. The Discharger is still responsible for conducting inspections above the minimum, as appropriate, taking into account site specific conditions, problem areas, and periods of above average rainfall. The schedule outlined in the revised MRP are minimum

requirements. The Discharger is responsible for taking all reasonable measures to ensure the site is maintained for the protection of water quality.

The revised MRP contains modifications to the transition between monitoring during the active harvest period through one year after harvest is completed and years two through five monitoring. The revised MRP also contains modifications to the process of rescinding the MRP at the end of year five monitoring. Under the current MRP, before the Discharger can proceed to years two through five monitoring or terminate monitoring at the end of year five, Water Board staff must conduct an inspection and the Executive Officer must provide a written confirmation. Water Board staff has conducted several plan area inspections at the end of year one monitoring. Staff has consistently found site conditions to be protective of water quality. Staff has determined that it is appropriate for the Discharger to proceed to year two monitoring at these sites. Due to staff's limited time base, only two Dischargers have received written confirmation that they may proceed to year two monitoring. Several more Dischargers are conducting year two monitoring strictly based on verbal confirmation from Water Board staff that they may proceed to the next monitoring phase.

Therefore, under the revised MRP, Water Board staff will conduct such inspections as necessary and appropriate and the Discharger will automatically transition to years two through five monitoring. The revised MRP also requires the Discharger to submit a Notice of Termination at the end of year five monitoring. Upon the Water Board's receipt of a completed NOT the MRP will automatically be terminated. Although, the Executive Officer retains the authority to require a Discharger to repeat a monitoring phase or extend the MRP past year five monitoring as appropriate.

Photo Monitoring

Based on the current MRP, photo monitoring is triggered by storm-events, forensic monitoring, and violations reporting and shall be at locations within the timber harvest plan area where timber harvest activities have the greatest risk of potential discharge (sites may be established by the Water Board's Executive Officer during or after the pre-harvest inspection). Storm-event based photo-monitoring points must include sites up and down stream of each newly constructed or reconstructed Class I and Class II watercourse crossing and landing within a Class I or II Watercourse or Lake Protection Zone (WLPZ). As a result of this requirement, Dischargers have submitted nearly 300 photos of stream crossings, landings, and mitigation sites. Water Board staff has reviewed all photos and compared them against preharvest inspection photos, field notes, and the Dischargers visual inspection logs. Each of the 300 photos depict optimal field conditions. This type of categorical requirement has never resulted in Water Board staff identifying failed management practices or field conditions that could indicate a negative impact to water quality.

The revised MRP requires the Discharger to conduct storm-event based photo monitoring at location(s) and frequencies to be established by the Water Board's Executive Officer during or after the pre-harvest inspection. If the Water Board's Executive Officer does not establish storm-event based photo monitoring locations, the Discharger is not required to conduct photo monitoring. This allows the Executive Officer flexibility to specify photo monitoring where appropriate without the categorical requirement to conduct photo monitoring where it may not prove to be useful. The

Discharger is still required to conduct photo monitoring as part of forensic monitoring and violation reporting.

Water Column Monitoring

Since January 2003, the majority of new enrollees that meet Tier III and IV monitoring criteria have been required to collect in-stream turbidity and temperature data. Water Board staff has conducted a thorough review of the data submitted per this requirement. The following is a summary of the findings accompanied with recommended modifications.

Turbidity

Dischargers are required to collect storm-event based turbidity monitoring data in paired sets. These paired sets are either located upstream and downstream of the timber harvest area or upstream and downstream of a newly constructed or reconstructed Class I or II watercourse crossing. The purpose of requiring the Dischargers to collect storm-event based turbidity data is to assist Water Board staff in determining if timber harvest activities are impacting water clarity and increasing sediment loading of sensitive water bodies. During analysis of the turbidity data, Water Board staff considered the following limitations and constraints:

- The only type of siliviculture permitted in the Central Coast Region is selective silviculture. None of these data reflect conditions from clear-cutting.
- The Dischargers collected all data during post harvest conditions, the current MRP does not require the collection of baseline or preharvest turbidity data;
- A turbidity grab sample (the only type required in the current MRP) only provides information about the turbidity level at a specific site at the time the sample was taken and provides limited to no basis for extrapolating conditions elsewhere or at other times;
- Often times, the boundary of timber harvest plan area is defined by the stream where the Discharger is collecting turbidity data. Therefore, the turbidity data reflects conditions for which the Discharger only had partial control;
- Turbidity is an extremely variable parameter and the 12-to 24-hour window given to the Discharger to collect the data introduces an additional layer of variability;
- Due to this variability, conducting trend analysis over time for turbidity grab sample data in the same location over time or over different locations on the same date is inappropriate.;
- Some of the locations where the Dischargers are collecting turbidity data are not salmon or trout bearing water bodies;
- Cal Poly, as part of the Little Creek Study, continuously tracks turbidity levels during storm-events in preharvest (i.e. natural) conditions. Cal Poly has routinely recorded turbidity levels in excess of 800 NTUS following large storm-events.

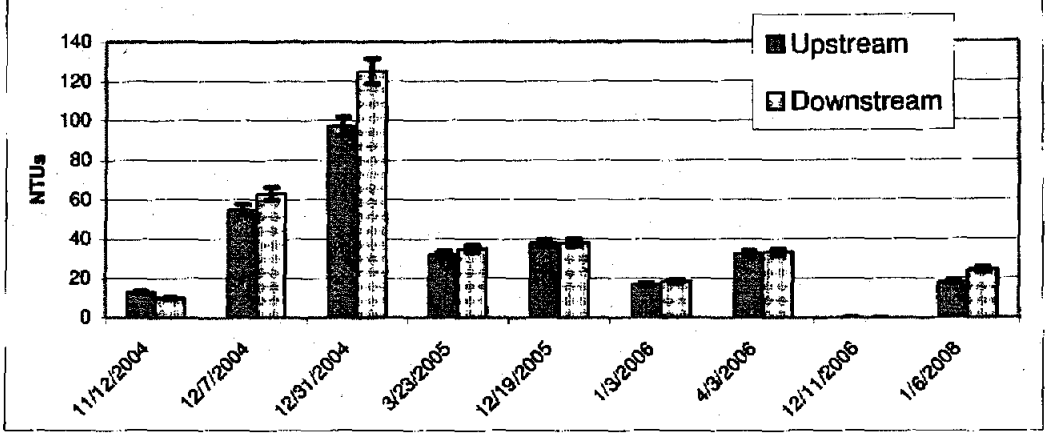
The current MRP requires the Dischargers to conduct turbidity monitoring on a storm-event basis and as required by forensic monitoring. The Dischargers submitted 369 turbidity grab sample data pairs representing five monitoring seasons (April 2003 through December 2008) and twenty-one timber harvest plan areas throughout the Central Coast Region. Water Board staff then compared the turbidity data against turbidity thresholds for salmon and trout cited in scientific literature and turbidity requirements cited in the Basin Plan. As little as 25 NTUs of turbidity caused a reduction in fish growth according to an article titled "Effects of Chronic Turbidity on Density and Growth of Steelheads and Coho Salmon" published by the American Fisheries Society (Sigler, 1984). The Basin Plan established that where natural turbidity is between 0 and 50 JTUs[2], increases shall not exceed twenty percent. Based on this information, and for the purposes of this analysis, Water Board staff established the following threshold: where either sample in the data pair exceeds 25 NTUs **and** downstream sample shows a greater than twenty percent increase from the upstream sample, in-stream conditions may be negatively impacting salmon and trout as a beneficial use of waters of the state.

Based on evaluation of these data, Water Board staff made the following observations, 1) Five percent or 19 pairs of the 369 data pairs exceeded the criteria, 2) Of the 19 data pairs that exceeded the criteria, 16 pairs, or four percent, are upstream and downstream of a plan area and three pairs or one percent of the data are upstream and downstream of a crossing, 3) The visual inspections logs associated with the nineteen pairs of data that exceed the criteria either report no failure of management practices or report correcting failed management practices at the time the Discharger discovered them during their visual inspection, 4) Water Board staff regularly conducts post-harvest inspections of timber plan areas. Water Board staff's field observations in post harvest conditions are consistent with the visual inspection logs, 5) The data range for the 369 data pairs (collected in postharvest conditions) is 0 – 834 NTUs, this data range is consistent with preharvest data collection in Cal Poly's Little Creek Study.

The chart below (Figure 1) displays storm-event based turbidity grab sample data for Timber Harvest Plan 1-02-190 SCR MacLean. The data pairs represent upstream and downstream samples of a Class II culverted watercourse crossing of the haul road. These data represent eight separate turbidity grab samples over five winter monitoring seasons. These data are typical of the data collected as part of the timber harvest program in the Central Coast Region. The error bars represent the margin of error for the turbidimeter used to analyze the samples.

[2] The Water Quality Control Plan's (Basin Plan) (Central Coast Region, 1994) numeric target for turbidity is listed in the antiquated Jackson Turbidity Units (JTUs). Yet the Dischargers are required to collect and report their turbidity data in Nephelometric Turbidity Units (NTU). There is no appropriate conversion factor for JTUs to NTUs.

Figure 1
Storm Event-Based Turbidity Monitoring
Upstream and Downstream of Crossing
MacLean 1-02-190 SCR



With the exception of the 12/31/04 event, the data pairs consistently meet the evaluation criteria for trout and salmon developed by Water Board staff. Based on the limitations and constraints for turbidity data listed above and the data from storm-events at crossings (1% exceed the threshold), Water Board staff concluded that turbidity data from crossings do not indicate a significant effect on water clarity or sediment load.

As discussed above, the Dischargers conduct visual inspections along with turbidity grab sample collection. The Dischargers repair failed management practices that could result in a sediment discharge, such as a breached water bar, based on their visual inspections. Repairing failed management practices is not routinely accomplished based on the results of storm-event based turbidity grab sampling but rather because of visual inspections. Therefore, Water Board staff concluded it is appropriate to modify the MRP to rely on visual inspections and adaptive management for water quality protection.

The revised MRP requires the Dischargers to collect turbidity grab samples based on forensic monitoring as needed. However, the Discharger will be required to notify the Water Board within 72 hours (revised from 48 hours) and provide a written report within ten days of a violation, sediment release, or events that trigger forensic monitoring.

The revised MRP states the following in regard to storm-event based turbidity monitoring:

> "The Discharger is required to conduct storm-event based turbidity monitoring at location(s) and frequencies to be established by the Water Board's Executive Officer during or after the pre-harvest inspection. If the Water Board's Executive Officer does not establish storm-event based turbidity monitoring locations, the Discharger is not required to conduct storm-event based turbidity monitoring."

Temperature

Temperature monitoring associated with the timber harvest program, like the turbidity data, is collected in paired sets. These paired sets are located upstream and downstream the timber harvest plan area. The purpose of requiring Dischargers to collect temperature data is to assist Water Board staff in determining if timber harvest activities are impacting water temperatures. During analysis of the temperature data, Water Board staff considered the following limitations and constraints:

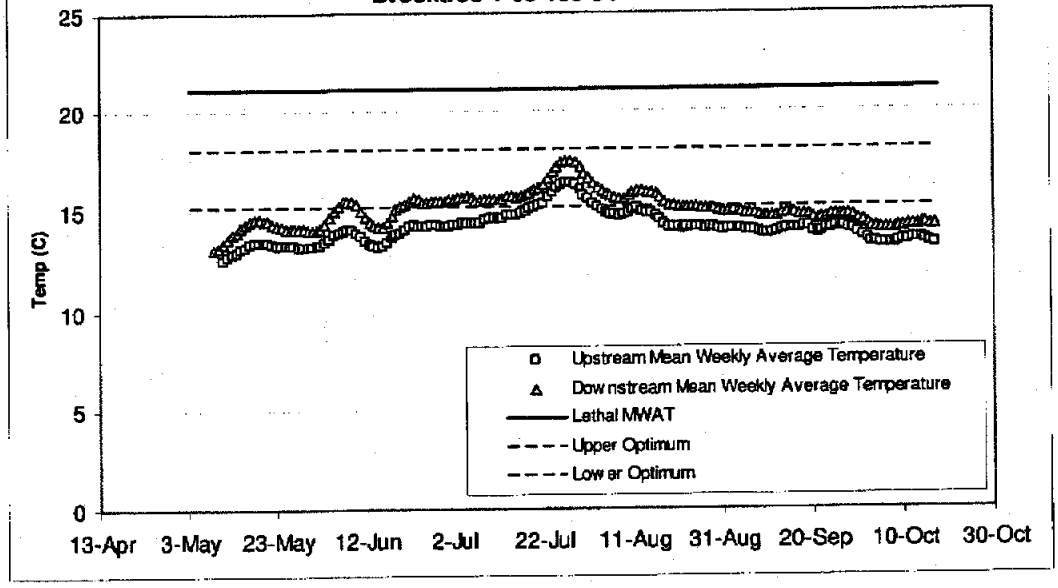
- The only type of siliviculture permitted in the Central Coast Region is selective silviculture. None of these data reflect conditions from clear-cutting;
- The Dischargers collected all data during post harvest conditions, the current MRP does not require the collection of baseline or preharvest temperature data;
- Stream-flow, especially in the upper reaches of Santa Cruz County watersheds, where timber harvests typically occur is very low outside of a limited number of perennial streams. This means that Dischargers frequently submerge the temperature data probes in extremely shallow stream conditions, disconnected pools, or in stream that drys out prior to the end of the monitoring season. This is against manufacturers' recommended specifications for the temperature data probes;
- Some of the locations where the Dischargers are collecting temperature data are not salmon or trout bearing water bodies;
- Often times, the boundary of timber harvest plan area is defined by the stream where the Discharger is collecting temperature data. Therefore, the temperature data reflects conditions for which the Discharger only had partial control.

The current MRP requires the Discharger to monitor temperature continuously from May 1 to October 15. The Dischargers have submitted thirty-three separate sample sets to the Water Board representing five summers (2004 through 2008) and twenty timber harvest plan areas. Water Board staff compared the temperature data collected by the Dischargers against the optimal temperature range for salmon and trout juvenile rearing (15 to 18°C) and their lower lethal limit (21°C) (Washington State Department of Ecology, 2002).

Based on evaluation of these data, Water Board staff made the following observations, 1) At no time did any of the data exceed the lower lethal limit, 2) Seventy percent of the data sets showed temperature levels that stayed within or below the optimal temperature range over the entire sampling season, 3) Twelve percent of sample sets had insufficient data due to dry creek conditions prior to the end of the sampling season, 4) Eighteen percent of the data sets had temperature results that exceeded the optimal temperature range for an average of ten days, 5) One-hundred percent of the data sets showed the downstream temperatures warmer than the upstream counterparts, 6) The Forest Practice Rules (enforced by Cal Fire), dictate specific canopy retention requirements for post harvest conditions in riparian areas. These canopy retention requirements depend on the type of stream channel and steepness of bank slope. All plans represented by the thirty-three data sets complied with Cal Fire's canopy retention requirements.

The graph below (Figure 2) displays temperature data for Timber Harvest Plan 1-05-138 SCR Brooktree over the summer of 2006. These data are representative of seventy percent of data sets that showed temperature levels that stayed within or below the optimal temperature range for the entire sampling season. The dashed lines represent the upper and lower optimal temperature range for salmonids based on the scientific literature. The solid line represents the lethal Mean Weekly Average Temperature (MWAT) for salmonids. When temperatures remain above the MWAT for extended periods of time, mortality rates of salmonids can increase dramatically.

Figure 2
Temperature Data Summer 2006
Brooktree 1-05-138 SCR



Considering the full set of temperature data and the limitations and constraints listed above, Water Board staff determined that timber harvest activities in the Central Coast Region do not appear to be negatively impacting stream temperature. Therefore, Water Board staff concluded that it is appropriate to modify the MRP to require temperature monitoring on a limited basis and rely on the Forest Practice Rules for canopy retention.

The revised MRP states the following in regard to required temperature monitoring:

> "The Discharger is required to conduct temperature monitoring at location(s) and frequencies to be established by the Water Board's Executive Officer during or after the pre-harvest inspection. If the Water Board's Executive Officer does not establish temperature monitoring locations, the Discharger is not required to conduct temperature monitoring."

Annual Reporting

The Discharger will still be required to submit an annual report to the Water Board by November 15 of each year. The current annual reporting period is November 15 of the previous year to November 14 of current year. The revised MRP includes a revised annual reporting period from September 30 of previous year to October 1 of current year. This allows the Discharger 45 days lead time to prepare the annual report.

Major or Minor Amendments

Water Board staff recommends that the Discharger continue to be required to notify the Water Board of any major or minor amendments to an already approved Timber Harvest Plan or Nonindustrial Timber Management Plan. Water Board staff will continue to review these notifications and modify the respective MRP as necessary and appropriate.

Compliance Activities, Report Review, and Inspections

Staff will conduct prioritized or random inspections to insure Dischargers are transitioning to the applicable monitoring year consistent with requirements and protective of water quality. Based on field inspections, Water Board staff may determine that management practices are failing or field conditions are not protective water quality. In these instances, Water Board staff will recommend, to the Executive Officer, modifications to the MRP. These recommended modifications will include, as appropriate to the specific site, photo, turbidity, or temperature monitoring. Staff may also recommend an increased frequency of visual inspections or an extension of MRP duration. Water Board staff will follow-up with additional site inspections to ensure the Discharger is complying with the MRP for the protection of water quality.

Occasionally, Dischargers fail to comply with the conditions of the Individual or General Conditional Waiver or the MRP. Such violations may include a failure to submit an NOI, failure to submit Annual Reports, failure to conduct visual inspections, or failed management practices leading to a discharge of sediment and organic material into waters of the state. In such instances, Water Board staff will continue to pursue enforcement activities as necessary and appropriate. This is critical for the protection of water quality and to maintain the integrity of the requirements.

RECOMMENDATION

Staff recommends that the Water Board adopt the recommended changes as described in this report and its attachments. Adaptation of these changes to the NOI, MRP, and regulation of THPs and NTMPs will improve efficiency of Water Board's regulation while protecting water quality. The improved efficiency of the timber harvest regulatory program will provide the opportunity for an increase in compliance inspections, further ensuring water quality protection because staff will focus more time on tangible outcomes of the management and regulation of timber harvest operations instead of review and preparation of documents for enrollment in the Conditional Waiver of Waste Discharge Requirements. Staff will periodically (approximately every two years) evaluate whether these changes maintain an appropriate level of water quality protection. Staff will consider the following indications in making this evaluation: reduction in incomplete applications, reduction in staff time and delays enrolling plans, status of harvest operations during compliance inspections or from complaints, review of monitoring and reporting information from Dischargers, and review of habitat and water quality conditions from regional monitoring efforts.

References

Central Coast Regional Water Quality Control Board. Water Quality Control Plan – Central Coast Region. September 8, 1994

Sigler, John W., T.G. Bjornn, and Fred H. Everest. "Effects of Chronic Turbidity on Density and Growth of Steelheads and Coho Salmon" *The American Fisheries Society.* 1984

Washington State Department of Ecology Water Quality Program Watershed Management Section. Evaluating Standards for Protecting Aquatic Life in Washington's Surface Water Quality Standards Temperature Criteria. December 2002

Attachments

1. General Conditional Waiver Order No. R3-2005-0066
2. Summary of Recommended Modifications
3. Current Notice of Intent
4. Revised Notice of Intent
5. Revised MRP No. R3-2005-0066

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State of California- The Natural Resources Agency
Department of Forestry and Fire Protection
Department of Fish and Game
1416 9th Street
Sacramento, CA 95814

***ARNOLD SCHWARZENEGGER**, Governor*
***Del Walters**, Director*
***Donald Koch**, Director*

June 18, 2009

George Gentry
Executive Officer
Board of Forestry and Fire Protection
PO Box 944246
Sacramento, California 94244-2460

Subject: Threatened or Impaired Watershed Rules, 2009

Dear Mr. Gentry,

Thank you for the opportunity to provide comments on the proposed amendments for the *Threatened or Impaired Watershed Rules, 2009*, Title 14 of the California Code of Regulations. The Departments of Fish and Game (DFG) and Forestry and Fire Protection (CAL FIRE) have collaborated to provide a unified set of detailed agency recommendations (see Attachment 1) on the proposed rule package for consideration by the Board of Forestry and Fire Protection (Board). Attachment 2 is provided as a list of references used to support our comments and recommendations. Attachment 3 is a matrix which summarizes the proposed watercourse and lake protection measures for Class I and II watercourses.

Our common goal has been to use the best available science to further integrate protection of listed anadromous salmonids under the California Endangered Species Act with the Board's regulations, consistent with the Forest Practice Act, the Porter-Cologne Water Quality Control Act and the California Environmental Quality Act in a permanent 2009 T/I rule, re-titled "Anadromous Salmonid Protection" rule. We believe that the proposed rule package together with our recommendations achieves this goal in a way that provides certainty and flexibility to the regulated public through methods and measures that are both implementable and feasible and which recognize regional differences in forest practices.

The proposed rule package contains important elements. The first is the opportunity for site-specific spatially variable alternatives to be proposed by the landowner. The Departments strongly support this concept, contingent upon availability of sufficient information to review and approve proposals by all review team agencies. The second is the distinction between Large and Standard Class II watercourses and the inclusion of prescriptions that maintain cool water temperatures, minimize delivery of sediment, and promote recruitment of sufficient large wood into aquatic habitat. Improvement of large Class II watercourse prescriptions is critical to meeting policies already established by the legislature and recently adopted in the *Joint Policy Statement on Pacific Salmon and Anadromous Trout*. As such, the Departments strongly support this element.

Improved protection for Class II segments of the watercourse continuum is an important goal. The critical first step is a method which delineates between Large and Standard Class II watercourses. The second step is adoption of prescriptions which provide improved bank stability, canopy retention, wood recruitment and sediment filtration for the larger Class II watercourses. Additional protection for smaller Class II watercourses is also generally supported by our Departments. However, our recommendations in Attachment 1 for Standard Class II watercourses may be modified if sufficient prescriptions are established for Class I and Class II – Large watercourses and the procedure for designating Class II – Large watercourses reliably includes a substantial portion of Class II watercourses in the Large category.

The proposed rule package also provides greater protection for Class I watercourses in the first 100' of the watercourse and lake protection zone. Although the proposed WLPZ width is reduced for Class I watercourses where unevenaged silviculture is proposed, we believe the proposed Class I and Class II Core and Inner Zone measures, including the no-cut prescription for the Core Zone, the measures that promote large tree and canopy retention in the Inner Zone, along with protection of the floodplain, channel migration zone, and Class III watercourses, are necessary regulatory improvements that will benefit and protect salmonid habitat. For these reasons, the Departments support optional amendments 17, 19, 20, 21, 22, 23, and 33, which enhance the proposed rule amendments. These enhancements to the proposed rule package would provide equivalent anadromous species riparian function protections and benefits as many of the existing T/I (2112) rules that were made permanent in coho salmon watersheds and would greatly reduce concerns over cumulative impacts to listed anadromous species. In contrast, optional amendments 1, 2, 3, 4, 5, 6, 7, 9, 12, 13, 15, 16, 18, 25, 26, 27, 28, 30, 31 and 32 would not provide adequate protection or contribute to recovery and restoration of listed salmonid species and habitat on forested lands should they be adopted.

With respect to the Southern Subdistrict of the Coast Forest District, we propose an alternative for Class II watercourse prescriptions. The specific rules that currently apply to this region reduce the potential impacts of individual harvest plans and the cumulative intensity of harvesting at the planning watershed scale. The Departments believe, based on regional data, the impacts are lower in comparison to many other forested landscapes in California. The Departments' support for the alternative prescriptions for Class II watercourses in the Southern Subdistrict are predicated on the adoption of Class I watercourse and lake protection zone prescriptions described in Attachment 1.

Finally, we encourage the Board to take action to simplify overlapping regulations that govern protection of anadromous salmonids. We would advise the Board to consider the interaction of the rule package it proposes with the current watercourse and lake protection rules, the interim T/I rules, and the permanent 2112 rules (14 CCR 916.9.1 [936.9.1], 916.9.2 [936.9.2], 923.9.1 [943.9.1], 923.9.2 [943.9.2]) and to eliminate any redundancies that may exist. For example, if the Departments' recommendations are accepted, the Board could eliminate redundancies that would exist between the rule package and the permanent 2112 rules.

We look forward to continuing to work with the Board to adopt permanent rules for the protection of anadromous salmonids. If you have any questions regarding these comments, please contact Mark Stopher, Environmental Program Manager II, at 530.225.2275 (mstopher@dfg.ca.gov) or Bill Snyder, CAL FIRE Deputy Director, at 916.653.4298 (bill.snyder@fire.ca.gov).

Sincerely,

Donald Koch
Director
Department of Fish and Game

Del Walters
Director
Department of Forestry and Fire Protection

Attachments

cc:
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Todd Ferrara, Deputy Secretary, Natural Resources Agency
Charles R. Hoppin, Chair, State Water Resources Control Board, Sacramento
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