

**DEPARTMENT OF FORESTRY AND FIRE PROTECTION**

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September 26, 2016

Matthias St. John, Executive Officer  
North Coast Regional Water Quality Control Board  
5550 Skylane Boulevard, Suite A  
Santa Rosa, California 95403

Attention: Ms. Alydda Mangelsdorf  
Mr. James Burke

RE: California Department of Forestry and Fire Protection (CAL FIRE) Comment  
to North Coast Regional Water Quality Control Board (NCRWQCB)  
Draft Order No. R1-2016-0004

Dear Mr. St. John:

Thank you for the opportunity to comment on draft Order No. R1-2016-0004, Waste Discharge Requirements for Nonpoint Source Discharges and Other Controllable Water Quality Factors Related to Timber Harvesting and Associated Activities Conducted by Humboldt Redwood Company, LLC, in the Upper Elk River Watershed (WDR). CAL FIRE is fully supportive of a WDR that protects water quality and is consistent with the best available science.

CAL FIRE commends the NCRWQCB for allowing the enrollment of Timber Harvesting Plan (THP) 1-12-110 HUM (McCloud Shaw THP) under the proposed WDR. The Railroad Gulch Best Management Practices (BMP) Evaluation Project is designed to evaluate the effectiveness of Humboldt Redwood Company's (HRC) Habitat Conservation Plan (HCP), the Forest Practice Rules, and Elk River Watershed Analysis-derived prescriptions in minimizing sediment delivery to watercourses in response to contemporary timber harvest activities, through the use of both compliance and effectiveness monitoring. Ultimately, this project will test the effectiveness of the harvesting practices currently in use by HRC in the Elk River watershed in controlling harvesting-related erosion.

CAL FIRE's primary objection with the proposed WDR is the expanded riparian buffer requirements for Class II and III watercourses. CAL FIRE believes that the rationale contained in the proposed WDR is not sufficient or well-articulated enough to support the need for expanded riparian buffer requirements. To wit, Item 43 of the proposed WDR states:

*Section I.B. of this Order establishes protection measures for RMZs that incorporate ERSC WA prescriptions for riparian protection as minimum protection standards with additional requirements for RMZ widths and post-harvest tree retention on Class II and III watercourses to minimize peak flow increases, protect slope stability and promote and maintain robust riparian stands.*

CAL FIRE's contention is that the proposed specific requirements related to riparian buffer expansion do not have a clear process-based linkage to the resources and/or watershed processes of concern.

Item 43 discusses the need for additional riparian protection based on the minimization of peak flow increases. Although it is not explicitly clear, CAL FIRE interprets that items 40 and 41 of the proposed WDR elaborate on this by suggesting that expanded riparian protections are necessary for moderating downstream flood peaks, stabilizing channel banks, and for preventing soil pipe and gully erosion. Despite assertions by the NCRWQCB, the effectiveness of expanded riparian buffers for mitigating against these potential land use-induced process alterations is questionable. For Caspar Creek, Reid and others stated in their paper published in the journal *Geomorphology* (2010):

*Robust buffer strips were incorporated into the logging plan, providing extensive filter strips below upland sediment sources and preventing direct disturbance to a significant portion of the stream network. Despite these measures, suspended sediment yields increased significantly after logging, and much of the increase appears to originate from gully-related processes that are not amenable to mitigation either through road improvements or buffer strips. If increased runoff after logging generates sediment from within downstream channels, control of excess sediment from this source would be possible only through management of the level of hydrologic change induced by logging, and this would require either management of the rate of logging within a watershed or modification of the silvicultural strategy used.*

Regarding the mitigation of soil piping and gully erosion, Dr. Matthew Buffleben, formerly of the NCRWQCB, made similar recommendations to Reid et al. (2010) in a presentation to the California State Board of Forestry and Fire Protection's Monitoring Study Group ([http://bofdata.fire.ca.gov/board\\_committees/monitoring\\_study\\_group/meeting\\_minutes/2010\\_msg\\_meeting\\_minutes/msg\\_meetingminutes\\_031710\\_1.pdf](http://bofdata.fire.ca.gov/board_committees/monitoring_study_group/meeting_minutes/2010_msg_meeting_minutes/msg_meetingminutes_031710_1.pdf)). Dr. Buffleben's presentation was on his Doctor of Environmental Science and Engineering dissertation research which occurred in the Elk River watershed and focused on soil creep, bank erosion, and headward channel extension in headwater channels. Dr. Buffleben made recommendations at the end of his presentation to prevent gullies from forming in headwater swales. These recommendations included (1) reducing the amount and rate of clearcutting, or changing silviculture to selection harvesting; (2) using equipment limitation zones for headwater streams and swales; and (3) using aerial yarding

systems rather than ground-based yarding. His recommendations did not include increased riparian buffer protection.

The proposed WDR already manages peak flow increases through proposed constraints on the rates of harvest. Additionally, HRC has committed to use of selection silviculture, which further mitigates the potential for peak flow increase, and associated geomorphic impacts, at the hillslope and small watershed scale. The avoidance of bank erosion is achieved by concentrating protection measures within the inner most portions of the riparian management zones where the maintenance of rooting strength is of primary concern. For example, the likelihood of bank erosion is decreased through a 30-foot "no cut" in the inner zone of Class II watercourses and a prohibition on cutting trees that influence rooting strength adjacent to the active channel for Class III watercourses.

Regarding the need for expanded riparian protection for issues related to slope stability, the California Forest Practice Rules require the identification and disclosure of unstable areas as a requirement of the THP process (14 CCR § 1034(x)(10)). California Forest Practice Rule 14 CCR 916.4(a)(1) requires the plan proponent to identify unstable areas within watercourse and lake protection zones (WLPZs) that could impact water quality. Furthermore, plan proponents are encouraged to use California Geological Survey Note 45 (CGS, 2013), which explicitly addresses threats to water quality in its guidelines. It is unclear what additional protection is afforded by the increased riparian protections that are not already covered by site-specific review from a licensed HRC geologist, licensed CGS engineering geologists that check for THP conformance with the California Forest Practice Rules, and oversight from licensed NCRWQCB engineering geologists.

Finally, the last rationale for the increased riparian buffer protections is to "promote and maintain robust riparian stands." Although it is unclear what this means, CAL FIRE interprets this as meaning the restoration and maintenance of riparian processes and functions. Many studies support the contention that other riparian processes (e.g., shading, nutrient input) are generally subsumed within the innermost zone for large wood recruitment (e.g., Benda 2008), and that most large wood (90%) is recruited from within 30 m (~100 feet) of channel banks in managed coastal California forests (Benda and Bigelow 2014). Large wood recruitment source distances can be further where the dominant input mechanism is from landslide input (Naiman et al. 2000, Benda and Associates 2004, Benda and Bigelow 2014). The need for additional RMZ protection measures beyond the Forest Practice Rule and HCP standards, including expanded RMZ width in landslide prone terrain and areas with high windthrow potential, can be determined by the RPF and interagency Review Team field participants on a project-by-project basis, as part of THP development and review. Monitoring results for the HCP standards, as well results from the Railroad Gulch BMP Evaluation Project, should be used to modify the current FPR/HCP RMZ standards if they are found to be inappropriate.

In conclusion, we recommend that you readdress or rearticulate your rationale for expanded riparian buffer requirements. We also strongly urge for you to delay the implementation of the proposed riparian zone protections until results from the Railroad

Gulch BMP Evaluation Project become available. Thank you for the opportunity to comment on draft Order No. R1-2016-0004. If you have any questions or comments regarding this letter, please do not hesitate to contact Drew Coe (530) 224-3274, [drew.coe@fire.ca.gov](mailto:drew.coe@fire.ca.gov) or Pete Cafferata (916) 653-9455, [pete.cafferata@fire.ca.gov](mailto:pete.cafferata@fire.ca.gov) of my staff.

Sincerely,



KEN PIMLOTT  
Director

cc: Helge Eng  
Dennis Hall

References:

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