



January 17, 2017

Public Comment
North Coast Action Plan Upper Elk River Sediment TMDL
Deadline: 1/17/17 12 noon

Via email to: commentletters@waterboards.ca.gov

Jeanine Townsend, Clerk
State Water Resources Control Board
P.O. Box 100, Sacramento, CA 95812-2000



Re: Comment Letter – North Coast Action Plan for Upper Elk River Sediment TMDL

Dear State Water Resources Control Board

Humboldt Redwood Company (HRC) appreciates the opportunity to comment on the North Coast Action Plan for the Upper Elk River Sediment TMDL (Action Plan) proposed for amendment into the North Coast Region Water Quality Control Basin Plan.

HRC is a privately owned forestry company managing timber production zoned (TPZ) lands in the Upper Elk River watershed. Our company mission is to demonstrate it is possible to manage productive forestlands with a high standard of environmental stewardship while operating as a successful business. Established in 2008 through the acquisition of the former Pacific Lumber Company assets, HRC has been involved, since its inception, in the development of the Upper Elk River TMDL. We recognize and support the NCRWQCB's longstanding desire and need to establish an effective and meaningful TMDL Action Plan for the Elk River watershed.

Concerns associated with upstream forestry activities and matters of health and safety related to downstream flooding and water supplies have been an ongoing discussion for many years now. As a result, forestry practices began to be substantially modified over 15 years ago to prevent and minimize sediment effects. Changes included new road construction and wet weather use requirements, improved logging methods, no harvest and expanded riparian protection zones, and watershed-wide harvest acreage limitations. Cleanup and Abatement Orders (CAOs) were issued to the previous landowner (subsequently inherited by HRC) requiring remediation of sediment sources originating from past practices to the extent controllable. Rigorous timber harvest and watershed trends monitoring and reporting programs, including third party monitoring, were established to evaluate compliance and effectiveness of these changes in forestry practices. Clearcut logging and harvest of old-growth timber was immediately eliminated in 2008 with the creation of HRC. A substantial reduction in sediment delivery to the Elk River stream system as a result of these actions is well documented (MacDonald, 2016; Tetra Tech, 2015; HRC, 2015; HRC 2014; SHN, 2013).

The Upper Elk River: Technical Analysis for Sediment (Tetra Tech, 2015) TMDL report concludes that despite a substantial reduction in timber management related sediment delivery, stream channel, banks, and floodplain continue to aggrade. The location of this aggradation is referred to as the 'Impacted Reaches' as shown in Figure 1 of the Upper Elk River Action Plan. These reaches are situated on the Elk River valley floodplain mostly outside HRC property.

HRC has spent considerable time and energy in the review of technical reports associated with the TMDL including the hiring of outside experts such as Dr. Lee MacDonald¹ in order to increase understanding of the science presented in Upper Elk River TMDL technical reports and conditions and processes affecting the identified 'impacted reaches'. HRC's forestry staff, hydrologist, geologist, and fisheries biologist, along with third party geomorphic experts, have conducted field investigation of general sediment concerns raised by NCRWQCB TMDL staff. As part of a multi-species state and federally approved Aquatic Habitat Conservation Plan (AHCP), HRC also conducts continual watershed analysis activities independent of the TMDL, with oversight from the AHCP signatory agencies (NOAA, USFWS, CDFW, and CAL-FIRE). Much of the sediment source estimates found in the TMDL derive from studies initiated by HRC. Collectively it is apparent that the changes in forestry practices over the past 18 years have been effective in controlling logging related sediment (HRC 2014; HRC 2015; Tetra Tech 2015).

As the TMDL process began to conclude, beginning with the NCRWQCB TMDL staff issuance of a peer review draft (March 4, 2013) and the subsequent Upper Elk River Technical Analysis for Sediment prepared by Tetra Tech (October 21, 2015), HRC attempted to become more engaged with RWB staff to address several concerns the company had with the TMDL. Comments were provided at workshops, during designated public comments periods, and at public hearings.

While some changes were made, several significant technical and legal flaws remain. Specifically these pertain to the decision to exclude the lower portion of the watershed affecting the identified 'impacted reaches'; elements of the sediment source analysis; and the assignment of a zero load allocation for forestry operations on county and state zoned private timberlands.

These specific concerns were brought to the attention of TMDL staff and the Regional Water Board (RWB) during the appropriate comment period in separate letters prepared by myself, Dr. MacDonald, and Wayne Whitlock (February 15, 2016). Oral presentations regarding these concerns were made at public adoption hearings on this subject matter (April 7, 2016 and May 12, 2016). The official written response provided by RWB TMDL staff either dismissed or inadequately addressed the concerns brought forth. Transcripts available for both public hearings demonstrate the RWB itself took these concerns more serious resulting in a divided 4-2 vote for Action Plan adoption. Even those Board members who voted in favor appeared conflicted, but as their testimony makes clear, there was a sense of need, if not weariness, to take action on an overdue TMDL 15 years in development. We understand this sentiment, however as a real party of interest being affected by the proposed Basin Plan Amendment, we believe it critically important that it meet all state and federal requirements of a TMDL, accurately depict all

¹ Natural Resource Ecology Lab, Colorado State University, Fort Collins, CO, 80523-1499; lee.macdonald@colostate.edu

current reasons for impairment, and establish a load allocation with clear, measurable, and attainable targets.

If the SWRCB agrees our concerns have merit, we are asking the State Board to return the Upper Elk River Action Plan to the RWB with specific instruction to remedy these concerns prior to State Board approval. Again, these concerns can be summarized into three related categories: Sediment TMDL and Zero Load Allocation, Sediment Source Analysis, and Exclusion of the Lower Elk River Watershed.

Sediment TMDL and Load Allocation

The SWRCB should reject the TMDL's confusing and unfounded Zero (0) Load Allocation and instruct the RWB to establish an accurate, legally justified, and feasible load allocation. Sediment conditions in the impacted reaches are a reflection of inherent watershed setting, downstream land use activities, contemporary sea level rise, *and* sediment loading. The current impairment is not solely due to sediment loading, and particularly not to sediment loading from current forest management activities which contribute an estimated less than 5 percent of total loading. We ask that the SWRCB require the RWB to establish a load allocation consistent with other North Coast stream TMDLs (e.g. 20-25% above background).

The TMDL Action Plan explains the loading capacity of the Upper Elk River Watershed is the total sediment load (natural and management-related) that can be discharged into the Upper Elk River and its tributaries without impacting beneficial uses or creating nuisance conditions (Action Plan, Section IV). The Action Plan contends that capacity for sediment is limited by ongoing aggradation in the impacted reaches and therefore the loading capacity for additional sediment is 'defined as zero' until the capacity of the impacted reaches can be expanded. The RWB then reasons since all delivered sediment to the Upper Elk River and its tributaries originate from natural background and management-related nonpoint source pollution, the load allocation is zero (0). Section IV then proceeds to explain this is a 'conceptual' zero value since no amount of land use restriction can physically result in zero loading of non-point source sediment (i.e. including the control of all natural and anthropogenic sediment delivery from the tributary system).

HRC has consistently objected to this Zero Load Allocation for several reasons. First and foremost, it is inconsistent with SWRCB guidelines to establish zero loading capacity for a naturally occurring water quality constituent such as sediment. Even by the RWB's admission, it is by definition unattainable. Guidance provided by John Marshack (Executive Director, California Water Quality Monitoring Council, SWRCB) this past October at the California Water Boards Water Quality Coordinating Committee (WQCC) Meeting in Sacramento seemed to speak to this very issue when he explained load allocations for naturally occurring water quality constituents such as sediment, should be established somewhere above a defined natural background. For sediment TMDLs we typically see this as 20-25 percent above background although the loading capacity can and does vary. In other instances, such as the Garcia TMDL, we see a narrative load allocation and implementation plan directing landowners to inventory

and control existing sediment sources and take reasonable measures to prevent new sources. Either of these approaches would make more sense and be acceptable to HRC.

The zero load allocation is unjustified. The Elk River continues to provide quality spawning and rearing habitat as demonstrated by the results of CDFW spawning and HRC juvenile salmonid surveys, and Elk River remains one of the most productive small stream salmonid tributaries along the North Coast (HRC 2014). Flooding is limited to the river's flood plain and occurs at a frequency consistent with, and in response to the same precipitation events, as other coastal streams in the Humboldt Bay region. Total annual suspended sediment yields at HRC's lowest hydrology station in the watershed (station 509) indicate a downward trend in recent years relative to annual instantaneous peak flow (pers.com. Nick Harrison, HRC Hydrologist 2016; MacDonald, 2016).

The establishment of a zero sediment load allocation until downstream channel conveyance outside of HRC's property is increased through voluntary efforts greatly oversimplifies the situation and places an unjustified emphasis on the effects of contemporary forestry on downstream conditions. Our objection appears supported by the fact the zero load allocation is presented as 'temporary' until channel and other downstream anthropogenic conditions causing impairment can be remedied, suggesting the RWB recognizes other important controlling factors. It's not diminutive forestry-related sediment loading, substantially reduced since 1997 by three to ten-fold (Tetra Tech 2015; MacDonald 2016), that is causing impairment, but rather a combination of factors including geomorphic setting and extremely low channel gradient, levee construction, vegetative roughness, lack of channel maintenance, mobilization of stored sediment, sea level rise, and underlying geology/ natural erosion processes. Figure one (attached) illustrates the unnatural 90 degree angle bends the river makes as it crosses its floodplain due to the channel's historic and contemporary use as an agricultural property boundary line confined by levees. These unnatural bends reduce stream velocity and contribute to deposition and vegetative growth within and adjacent the channel. These photos have been shown to the RWB during TMDL workshops and adoption hearings. Flooding effects are exacerbated by the location of rural subdivisions including homes, roads, and bridges situated on the floodplain and immediately adjacent the river.

Examination of the TMDL technical reports and assumptions indicates the Action Plan overstates the severity of ongoing aggradation. Natural deposition is expected to occur on the expansive Elk River floodplain where the stream channel averages less than 0.1 percent gradient. The TMDL Action Plan refers to an accumulation of 640,000 cubic yards of sediment in the impacted reaches since 1988. Examination of the data and methods used to arrive at this estimate found there is limited available data, in both time and space, to make such a calculation with any confidence. The only known discharge information available to extrapolate from occurred at a single location (circa 1957-1966, USGS), followed by decades without measurements until circa 1999 when cross-sections began to be collected. HRC has collected cross-section data from within the TMDL designated 'impacted reaches' going back to 1999 (See Attachment Two). This data clearly indicates little to no net aggradation since 1999. The behavior of the river on the depositional floodplain is to slowly aggrade until significant peak flow events such as that which occurred in 2003 produce scour. This is then followed by slow aggradation until the next scouring event. Attachment two shows cross-sectional measurements collected at Station 509

located on the Elk River mainstem immediately downstream of the North Fork and South Fork Elk River confluence.

Collectively, station 509 and similar data collected on the lower North Fork and South Fork tributaries to the Elk River (Stations 510 and 511), not far above Station 509 and also located in the 'impacted reaches', contradict the TMDL's findings regarding severe ongoing aggradation and/or indicate the bulk of the TMDL's estimated aggradation must have occurred from 1988 to 1997 (or prior). However since there was no reported cross-section or discharge data collected in the late 80s or early 90s it is difficult to understand how the TMDL arrives at this numeric volume (640,000 cubic yards) over the specified time period (1988 – present). Our independent review including consultation with Green Diamond Senior Hydrologist Matt House, and Dr. MacDonald, concludes this estimate is much too high based on review of the information available. The TMDL's contention that zero assimilative capacity currently exists is undermined by its own report that 75 percent of suspended sediment loading entering the impaired reaches passes through, making it clear that the channel's assimilative capacity is physically not zero (Tetra Tech 2015).

Finally, a zero load allocation dismisses the undisputed 16 year record of inventorying, removing, and controlling legacy sediment as required by RWB issued Clean-Up Abatement Orders, and HRC's Aquatic Habitat Conservation Plan (AHCP). Implementation of these requirements is reducing both near and long term sediment loading. Over 350,000 cubic yards of sediment associated with historic land use activities (1990s and prior) have been removed or otherwise prevented from entering the Elk River stream system since 1999, demonstrating the beneficial role holistic forestry plays in TMDL achievement (HRC 2015). Interpretation of the zero load allocation jeopardizes these ongoing activities which do occasionally result in some, albeit minimal, short term sediment discharge in exchange for long term sediment removal benefit. These activities are also jeopardized by the fact they are typically conducted and funded as part of ongoing forestry activities including timber harvest which the zero load allocation seeks to further constrain.

The Regional Board's official response to HRC regarding these concerns:

HRC's proposed alternative program is coupled with a recommendation that load allocations be established at no more than 125% above natural background [sic], similar to the approach taken in other North Coast sediment TMDLs... Staff believes a zero sediment load allocation is well supported, given the ongoing aggradation and existing risk to human health and welfare, public and private property, and infrastructure. Implementation of a zero sediment load requires additional protective measures not reflected in HRC's existing land management strategy. (Official Response, April 7, 2016, page 28)

HRC finds this response unsatisfactory because it fails to recognize that the primary controlling factor of the impacted reaches' condition and behavior is not forestry-related sediment loading. The TMDL technical reports are consistent in their finding of significantly reduced sediment loading over the last 20 years noting a greater than 60 percent reduction (Tetra Tech, 2015), yet they find this has not led to the stream channel improvements sought by the TMDL. Furthermore, the RWB has the same discretion in establishing specific waste discharge requirements, including additional protection under a traditional

allowable load allocation (e.g. 20-25% above background) as it does under a zero load allocation. And as previously noted, the RWB's contention that ongoing aggradation is substantial is not supported by review of the available cross-sectional measurements which show periods of intermittent scour and aggradation.

Also included in the official response is a statement that the *"zero load allocation is a basic construct that directs the Regional Water Board to craft waste discharge requirements in a manner that reduce and eliminate waste discharges to the maximum extent practicable. The proposed TMDL Action Plan is clear that the zero load allocation does not constitute an effluent limitation or a waste load allocation, and the Regional Water Board has discretion on how it chooses to implement it."* (Official Response, April 7, 2016, page 4)

Virtually the same rationale is included in the Adopting Resolution. See Findings 13 and 14.

The inclusion of the statement that the zero load allocation does not constitute an *effluent limitation* or a *waste load allocation* is irrelevant and unresponsive to our concern. Both of these terms apply to point sources that are regulated through NPDES permits. Load allocations--as in the case of the zero load allocation here--apply to nonpoint sources. Our objection here is to the impropriety of the zero load allocation for HRC's timberland and timber operations that are regulated as nonpoint sources. The principal concern is that the incorporation of this zero load allocation into the Basin Plan will be interpreted and applied literally, e.g., as a prohibition on any sediment discharge that could result from timber operations; notwithstanding the beneficial reduction in sediment loading resulting from control of legacy sediment sources and demonstrably improved forest practices. Such an extreme provision is arbitrary and capricious.

Recent petitions² challenging the Regional Board's issuance of Watershed-Wide Waste Discharge Requirements (WWDRs) to HRC demonstrate our legal concerns. The petitioners specifically challenge the sufficiency of the measures incorporated in the WWDRs in relation to the zero load allocation requirements of the TMDL/Action Plan. We note that the recently adopted WWDRs already include forestry prescriptions imposed by the RWB pursuant the conceptual zero load allocation notwithstanding the California State Board of Forestry and HRC's concerns raised over these new requirements. The record reflects that the RWB clearly relied on the advice it received from Staff during the TMDL process (and stated in the Action Plan itself) that the Board would have discretion in implementing the zero load allocation in the WWDRs. The fact that Petitioners are now relying on the TMDL Action Plan and its zero load allocation as supporting their arguments for even more stringent WWDRs is of great concern to HRC. The fact RWB staff's official response includes comment that the TMDL is silent on whether a complete logging moratorium in the upper watershed is the best means by which to achieve the zero load allocation only heightens our concern (official response, page 27).

² The Environmental Protection Information Center (EPIC) submitted a petition to the SWRCB on December 23, 2017 asking for review of the NCRWQCB Action adopting 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) including a Motion for Stay of Enforcement

In effect the TMDL Action Plan recognizes that the impairment is currently caused not only by historic sediment delivery but by the condition of the lower stream channel, flood plain, and associated downstream land use activities (see problem statement and voluntary efforts to remedy). As these conditions lie predominantly outside of HRC ownership, these are decisions and factors outside of HRC control. Yet the Action Plan places the entire Basin Plan regulatory burden on the upstream landowner's contemporary forestry operations in the form of a physically unattainable zero load allocation. This approach is unprecedented, unnecessary, and will not contribute effectively to recovery. We ask that the SWRCB require the RWB to establish a load allocation consistent with other North Coast stream TMDLs (e.g. 20-25% above background).

Sediment Source Analysis

The SWRCB should require that the RWB revisit and correct the sediment source analysis prior to TMDL Action Plan approval. The sediment source analysis is cited as part of the reason for the flawed zero load allocation. The needed corrections are not difficult to make as explained below.

At an estimated $144 \text{ yds}^3/\text{mi}^2/\text{yr}^1$ ($60\text{Mg km}^2/\text{yr}^1$), the TMDL's sediment source analysis significantly underestimates natural loading. To put in perspective, despite recognition in the TMDL's Technical Report (Tetra Tech 2015) that the watershed is inherently a high producer of sediment due to regionally active tectonics and uplift, weak bedrock, and high precipitation rates, the Upper Elk River TMDL establishes a natural loading estimate lower than any other previously adopted TMDL along California's North Coast. This would suggest the RWB believes the watershed is inherently less erosive than any other North Coast watershed; however we know based on TMDL staff and RWB member comment reflected in the TMDL record this is not their belief.

The literature consistently places natural North Coast California erosion rates within a wide range from 250 - 3700 $\text{Mg km}^2/\text{yr}^1$ (Stallman and Kelsey, 2006; Bennet et al., 2015; Andrew and Antweiler, 2012). These data along with a report from the California Geologic Survey (Bedrossian and Custis, 2002) indicate the natural erosion rate is at least 4-14 times the value of $60\text{Mg km}^2/\text{yr}^1$ that is estimated in the Upper Elk River Sediment TMDL. The natural rate should be corrected and adjusted upwards within the range of at least 250 – 1000 $\text{Mg km}^2/\text{yr}^1$ prior to SWRCB approval of the Action Plan (MacDonald, April 7, 2016 Presentation to NCRWQCB).

Part of the reason the TMDL natural loading is underestimated is that a substantial portion of naturally occurring bank erosion and streamside landsliding incorrectly assigned as an anthropogenic source (See In-Channel Sources: bank erosion and streamside landsliding, TMDL Action Plan Table 1). At $160 \text{ yds}^3/\text{mi}^2/\text{yr}^1$, the TMDL finds over 50 percent of anthropogenic delivery attributable to this source. HRC and others (Green Diamond, MacDonald) argue that this finding is what leads to substantial overestimation of anthropogenic loading, and contributes the underestimation of natural loading.

The TMDL uses a bank erosion and streamside landslide unit rate provided in part by work contracted by HRC (SHN 2013). However instead of extrapolating this unit rate based on known stream lengths and densities found in the watershed, the RWB chooses to extrapolate using two different stream channel densities: one for a presumed background condition where stream channel density is estimated at 6

miles/mi² and one for managed timberlands where TMDL staff estimates stream channel density to be 15 miles/mi² (NCRWQCB 2013). These two different stream densities result from a questionable study of a small sample size designed to determine contributing drainage area in managed and never managed (old growth forest) lands necessary to initiate a first order stream channel. Using this information TMDL staff established two hypothetical drainage densities for Elk River; one managed and one unmanaged. The TMDL then compares the volume of delivery based on the unit erosion rate multiplied by the modeled background (unmanaged) stream density to that of the managed stream density. The difference in volume delivery is then assigned to the in-channel anthropogenic source category shown in Table 1 of the TMDL Action Plan.

We have two technical objections to this approach. The first is that HRC, its predecessor, and its neighbor Green Diamond Resource Company have all conducted near 100 percent field stream surveys of their respective ownerships during the course of forestry activities over the last two decades. These stream surveys have been mapped in spatial GIS databases and provide a very accurate depiction of actual stream length and density watershed-wide. Independent estimates of field verified stream densities on managed timberlands in the Upper Elk River watershed is consistently 10 miles/mi²; not 15 miles/mi² as suggested by the TMDL.

Second, the licensed engineering SHN geologist who was tasked with the surveying of over 26 miles of watercourses in the Upper Elk River to develop the unit rate of sediment delivery was also asked to look for cause and effect linkages. In his signed report, the contractor notes *that without exception, riparian zones were found intact and no relationship between contemporary forest management (1999 – present) and bank erosion/small streamside landslide processes was observed* (SHN 2013). The TMDL uses the unit rates established by SHN but completely dismisses their findings that the bank erosion and streamside landsliding is predominantly natural with only 25 percent of the erosion linked to historic pre- 1999 land use activities, and none linked to contemporary forestry.

This is important because since 1999, great effort has been made in the Upper Elk River to minimize and prevent forestry-related streamside landslides and bank erosion. These efforts have included establishment of no harvest and no ground-based equipment zones adjacent watercourses; restrictions on rate of harvest addressing peak flow concerns; requirements for licensed geologic review to address slope stability; and most recently, since 2008, the elimination of clearcutting upslope of riparian areas in favor of selective partial harvest, further benefiting both slope stability and reduced peak flow effect (HRC 2015). These substantial changes in practices are not discussed in detail in the TMDL technical reports or accounted for in the Action Plan sediment source analysis. This contributes to the TMDL's misrepresentation of streamside landslide and bank erosion as being predominantly anthropogenic, rather than natural.

The RWB's official response to our comment that the natural background loading rate in the TMDL Action Plan is underestimated is that not all natural mass wasting reaches the stream system [April 7, 2016 Response, page 13]. While this is true, the primary driver of natural erosion in an undisturbed setting is soil creep, streamside landsliding, and bank erosion. Unlike historic anthropogenic ground disturbance associated with poor road, landing, and skid trail construction which can produce top-down

hillslope failures as unconsolidated fill becomes saturated, natural processes are predominantly bottom-up driven by stream power during peak flow events and have high rates of delivery as the erosion begins at the toe of the slope, within or adjacent the channel itself. Dr. MacDonald accounts for hillslope storage by limiting his natural delivery rates for the purpose of the TMDL sediment source analysis to 250 - 1000 Mg Km²/Yr.

No explanation is provided by the RWB as to why the natural loading estimated for the Upper Elk River TMDL is the lowest of all approved North Coast watershed TMDLs despite its inherent geomorphology including very active tectonics and uplift, underlying geology, and relatively high precipitation (Tetra Tech 2015; HRC 2014).

In making its decision not to revisit the estimates of natural sediment loading found in Table 1 of the TMDL Action Plan, the official response refers to the zero loading capacity and allocation as justification, noting that if *“truly underestimated, the natural loading estimates currently contained in Table 1 represent a margin of safety with respect to the proportion of the total annual load that is anthropogenic”* [April 7, 2016 Response, page 24]. This response can be inferred to suggest RWB staff sees some merit in our argument that natural loading may in fact be underestimated.

Similar logic is found in the official response to the concerns raised regarding the significant difference in stream density between the landowner’s field measured densities and NCRWQCB staff’s estimates from a small sample size. The RWB characterizes both as ‘estimates’ and references TMDL guidelines for inclusion of margin of safety for electing to choose the statistically less reliable number in its sediment source analysis. We continue to find this approach troubling when it is clear that one source of data (near 100 percent field watercourse surveys) is clearly superior to the other (extrapolation of a small data set regarding the contributing area initiating first order watercourses).

The official response further dismisses our concern by stating that *“... ultimately, the present assimilative capacity for Elk River is zero and the concerns over drainage densities used in the Source Analysis are less important with respect to the Program of Implementation as aggradation and additional sediment loads from any source, natural or anthropogenic, continues to negatively impact beneficial uses”* (April 7, 2016 Response, page 15). The rationale of this response is undermined by the fact the TMDL Action Plan itself states it derives the TMDL zero load allocation from the sediment source analysis suggesting the sediment source analysis is important in the RWB’s finding for zero load allocation. Section IV of the TMDL Action Plan goes on to state that like the zero load allocation, the sediment source analysis *“incorporated multiple conservative assumptions when applying measurements of surface erosion, landslide, and stream bank erosion across all the subwatersheds”* [TMDL Action Plan, Section IV]. It seems as though the ‘margin of safety’ argument is used excessively to downplay the importance of developing a scientifically justifiable sediment source analysis, as well as to support the unprecedented zero load allocation. We question the appropriateness of this use; and are left wonder whether the RWB would have adopted an unprecedented zero load allocation if the background to anthropogenic relationship had been more accurately represented in the TMDL.

However, again as the official response often notes, the RWB considers the accuracy of the sediment source analysis somewhat irrelevant because of its separate finding that certain reaches of Elk River lack assimilative capacity for any additional sediment. We see this as an arbitrary finding as the Elk River flood frequency is comparable both in frequency and timing to other North Coast streams; and the Tetra Tech Report (2015) reports both assimilation and through transport of suspended sediment.

HRC is simply requesting a more accurate and scientifically supported characterization of sediment loading in the Upper Elk River. We believe this would contribute to a better understanding of the watershed and a legitimate sediment load allocation. We ask the SWRCB to direct the RWB to revisit the above discussed specific elements of the Sediment Source Analysis: natural loading, and anthropogenic streamside landslide and bank erosion.

Exclusion of the Lower Elk River Watershed from the TMDL Assessment and Action Plan

The entire Elk River watershed was listed as 303(d) sediment impaired however the RWB elected to assess only the upper watershed for purpose of defining the TMDL. There is little debate that residential rural development and associated infrastructure located on the floodplain, along with the cumulative effects of longstanding downstream agricultural land use share the stage with upstream timber management as influences on the current condition of the ‘impacted reaches’ and conditions found further downstream. Substantial and significant floodplain modification over the last 150 years combined with sea level rise and lack of stream channel management all play a prominent role in how the mid and lower stream channel and floodplain function.

We appreciate that the Action Plan was revised in response to our initial comments. The Action Plan now acknowledges the role of historic and contemporary downstream land use activities (i.e. ranching, farming, roads, and residential development) causing sediment impairment in its Problem Statement (Action Plan, Section I). However, the final exclusion of the lower watershed and historic estuary immediately downstream of the ‘impacted reach’, suggests a continued ignorance of the effect these downstream channel and floodplain conditions have on sediment transport and streamflow. The fact the channel width actually diminishes moving downstream in several instances due to non-forestry related land use activities is a significant contributor to impairment. Addressing this condition, however, is left to voluntary action and future study, while the ineffective regulatory burden for recovery is placed on upstream timberland owners in the form of the zero load allocation.

The TMDL, Action Plan and Response to Comments are inadequate in their explanation as to why the entire watershed was not considered relative to necessary actions to remedy sediment impairments. The official response provided is the TMDL Action Plan relies upon other lines of voluntary study (i.e. Elk River Recovery Assessment and Stewardship Program) *“to address all Lower Elk factors influential in the impacted reaches’ impairment and harm to beneficial uses”* [RWB official response, pg. 12]. Similarly in its response, the RWB acknowledges *“the effects of the Lower Elk to the impacted reach have not been completely studied, an effort for which the Recovery Assessment was conceived in part”*.

HRC finds this response unsatisfactory because the RWB makes it clear that they have not completed study of the causes of impairment yet have arrived at an unprecedented zero load allocation, based on

lack of stream channel assimilative capacity, to be enforced against only one limited class of contributor. It is unjustifiable to assign a load allocation into the North Coast Basin Plan for a limited class of contributor, significantly threatening our business operations, without completing a thorough assessment of all factors contributing to sediment impairment and adopting requirements to address all contributions.

We note this exclusion of the lower watershed from the TMDL assessment area and Action Plan was also a point of concern for several NCRWQCB members during the adoption hearings, along with concerns voiced that the sediment source analysis was a 'black box'. The SWRCB may want to consider listening to or reading the transcript from the TMDL Action Plan adoption hearings to shed further light on these concerns.

We request the SWRCB either require the RWB to include the entire watershed in its TMDL assessment or revisit the Action Plan's load allocation for forestry activities, absent a complete and thorough understanding of all land use activities and inherent natural conditions affecting sediment impairment.

Legal Comments

Finally, we renew concerns raised by our counsel in the TMDL process. HRC asserts that the concerns articulated in Mr. Whitlock's comment letter (February 15, 2016) on behalf of HRC and Green Diamond Resource Company have not been adequately addressed in the RWB's official response, including:

- The TMDL Action Plan conflicts with the RWB's statutory authority and would lead to violations of Water Code Section 13360 in the permitting process
- Failure to consider alternatives and the economic impacts of the RWB TMDL Action Plan
- Adoption of the TMDL Action Plan as proposed would violate applicable requirements of California's Administrative Procedure Act (APA) rulemaking standards of necessity, authority, and clarity
- Adoption of the TMDL Action Plan as proposed does not satisfy CEQA requirements including consideration of alternatives and the unjustified reliance on the Substitute Environmental Documentation (SED) for the Temperature Policy Basin Plan amendment
- Satisfaction of constitutional limitations on the regulatory burden that may be imposed under Supreme Court Nolan and Dolan decisions

Conclusion

In closing we again emphasize that HRC recognizes and supports the NCRWQCB's longstanding desire and need to establish a well-reasoned and effective TMDL implementation plan for the Elk River watershed. Based on our discussions with Dr. Lee MacDonald and understanding provided by our own science team representatives from state and federal agencies (CAL FIRE, CDFW, CGS, and NOAA Fisheries), we believe final adjustments to the TMDL consistent with the comments provided above will serve to accomplish a scientifically defensible and effective TMDL implementation plan for Elk River.

We respectfully ask that the SWRCB not approve the North Coast Action Plan for Upper Elk River Sediment TMDL (Action Plan) Basin Plan amendment until these concerns have been carefully reviewed and addressed.

Thank you for your consideration.

Sincerely

Michael W Miles
Forest Manager, RPF
Humboldt Redwood Company LLC



References (Available upon request):

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Attachment 1. Contemporary and historic photos of extensive alteration to the Elk River floodplain and channel affecting streamflow and sediment transport capacity



Attachment 2. 1999 - 2016 Elk River Change in Cross-Sectional Area Record at HRC Station 509

