

## **RESPONSE TO COMMENTS**

### **PUBLIC REVIEW DRAFT GUALALA RIVER TOTAL MAXIMUM DAILY LOAD FOR SEDIMENT AUGUST 14, 2001**

#### **Alan Levine, Coast Action Group**

Comment 1: The commentor states that a “thorough assessment...has been accomplished”, and that “the proposed TMDL takes a much needed science based step... The TMDL includes adequate...assessment.”

Response: In the final TMDL, EPA has retained the elements discussed by the commentor.

Comment 2: “EPA is to be commended in including targets for ...embeddedness, large woody debris, turbidity, and aquatic insects, as well as upslope and land management targets.”

Response: In the final TMDL, EPA has retained the elements discussed by the commentor.

Comment 3: “The amount of coordination, information, analysis and synthesis <in the TSD> is impressive. The Regional Board Staff deserve recognition for their work.”

Response: EPA agrees with the positive comments regarding the Regional Board’s TSD.

Comment 4: The commentor outlines the TMDL requirements.

Response: No response needed.

Comment 5: “The final TMDL should result in a Basin Wide Conservation Plan with the incorporation of Site Specific Conservation plans...”

Response: EPA agrees that a plan to implement the final TMDL is needed. The authority for developing implementation plans resides with the North Coast Regional Water Quality Control Board (Regional Board.) EPA will provide a copy of the public comments we received on the draft TMDL, including those pertaining to implementation, to the Regional Board for their consideration during development of an implementation plan.

Comment 6: The commentor makes several observations that the TMDL and TSD provide adequate information and have supported reasonably accurate findings.

Response: In the final TMDL, EPA has retained the elements discussed by the commentor.

Comment 7: The TMDL “should be used to support future implementation and monitoring strategy...”

Response: The authority for implementation planning resides with the North Coast Regional Water Quality Control Board (Regional Board.) EPA will provide a copy of the public comments we received on the draft TMDL, including those pertaining to implementation, to the Regional Board for their consideration during development of an implementation plan.

Comment 8: The commentor makes several observations about how land management activities have increased erosion and limited fish. He notes high levels of turbidity.

Response: EPA agrees that land management activities have increased erosion and that this has adversely affected fish habitat. Suspended sediment samples were taken by the Regional Board during development of the TSD, but the data is inconclusive. Due to the lack of rainfall, flows throughout the winter were relatively low. Thus, insufficient samples were collected during high flows, which is when higher suspended sediment and turbidity typically occur. EPA is unaware of other turbidity or suspended sediment sampling in the Gualala. If other data on turbidity in the Gualala exist they should be submitted to the Regional Board.

Comment 9: “The statement that Dry Creek may have better conditions should be removed. Dry Creek habitat conditions are extremely poor. There is no justification of basis in fact for this statement.”

Response: The Gualala TSD states: “With the exception of Dry Creek, all of the tributaries, on average, have percent fines greater than 15% and thus fall within the range for salmonid habitat that is less than ideal. At Dry Creek, both D50 and percent fines data for this stream indicate that the substrate for this creek provides suitable salmonid habitat with respect to these two parameters.” EPA is not aware of any information indicating otherwise. If the commentor has data that indicate poor habitat conditions it should be submitted to the Regional Board or EPA.

Comment 10: Stream bank condition and Large Woody Debris should be included in the assessment.

Response: The State of California has listed sediment as the pollutant that is causing impairment of the Gualala River. Thus, this TMDL focuses specifically on sediment. Although some information on non-sediment factors is included in the TSD, neither the TSD or TMDL is a watershed assessment where all possible factors that could affect fish are assessed. However, recognizing that there is a connection between large

woody debris and sediment, EPA included a water quality indicator for large woody debris in the draft TMDL, and is retaining it in the final TMDL.

Comment 11: Turbidity is not listed as a limiting factor. There is evidence of elevated levels of turbidity in the Gualala River.

Response: Suspended sediment samples were taken by the Regional Board during development of the TSD, but the data is inconclusive. Due to the lack of rainfall, flows throughout the winter were relatively low. Thus, insufficient samples were collected during high flows, which is when higher suspended sediment and turbidity typically occur. EPA is unaware of other turbidity or suspended sediment sampling in the Gualala. If other data on turbidity in the Gualala exist they should be submitted to the Regional Board.

Comment 12: The commentor talks about overwintering habitat and large woody debris.

Response: The State of California has listed sediment as the pollutant that is causing impairment of the Gualala River. Thus, this TMDL focuses specifically on sediment. Although some information on non-sediment factors is included in the TSD, neither the TSD or TMDL is a watershed assessment where all possible factors that could affect fish are assessed. However, recognizing that there is a connection between large woody debris and sediment, EPA included a water quality indicator for large woody debris in the draft TMDL, and is retaining it in the final TMDL.

Comment 13: Discussion of culvert sizing and installation deserve their own individual consideration in the problem statement and targets section.

Response: EPA agrees that improper culvert sizing and installation are common problems which result in excessive sediment delivery to streams. EPA addressed these factors in the draft TMDL through the inclusion of water quality indicators for stream diversion potential at road crossings (which is related to improper culvert sizing, maintenance and placement), stream crossings with high risk of failure and stream crossing failures. EPA is retaining all three indicators in the final TMDL.

Comment 14: Findings from the Caspar Creek study may have relevance.

Response: EPA and the Regional Board considered the Caspar Creek study during development of the TSD and draft TMDL.

Comment 15: The commentor notes agreement with the water quality indicators for turbidity, % fines, cobble embeddedness, residual pool depth, large woody debris, stream crossing with diversion potential, hydrological connectivity, annual road inspection, disturbed area and activity in unstable areas. The commentor makes

several suggestions regarding proper monitoring techniques and implementation of indicators in timber harvest plans.

Response: These indicators are retained in the final TMDL. Implementation planning is the responsibility of the Regional Board. EPA will provide a copy of the public comments we received on the draft TMDL, including those pertaining to implementation, to the Regional Board for their consideration during development of an implementation plan.

Comment 16: The commentor recommends keeping the V\* target of 21%.

Response: The proposed target for V\* is not 21%, but \$ 15%. EPA believes the commentor may have misread the proposed TMDL. EPA has retained the proposed target in the final TMDL.

Comment 17: The commentor recommends adding pool frequency and backwater pools as targets. Also recommended is using suspended sediment as a target.

Response: Proportion of stream length in pools, an indicator included in the draft and final TMDL, is very similar to pool frequency. Backwater pools was excluded from the set of indicators because other similar pool indicators and a LWD indicator are included. The draft and final TMDL include two turbidity and one suspended sediment targets.

Comment 18: The commentor recommends adding discussion on fish/food production, canopy and temperature.

Response: The State of California has listed sediment as the pollutant that is causing impairment of the Gualala River. Thus, this TMDL focuses specifically on sediment.

Comment 19: The commentor recommends including land use tables (by planning watershed) of % of activity, and type of silvicultural technique and road density.

Response: A table showing road densities by planning watershed has been added to both the final TMDL and TSD. Reliable information describing extent of land use does not exist. The North Coast Watershed Assessment Program (NCWAP) is currently compiling much of the data recommended by the commentor, however, this information is not yet available.

Comment 20: Skid trails are not included and are a major erosional process.

Response: EPA agrees that skid trails are an important source of sediment. In the draft TMDL, EPA identified a load allocation for skid trail surface erosion (5 tons/mi<sup>2</sup>/yr) that is considerably lower than the estimate of current surface erosion from skid trails (30

tons/mi<sup>2</sup>/yr). The load allocation for skid trail surface erosion is retained in the final TMDL.

Comment 21: Commentor provides data on the road density in the Gualala.

Response: Information on road density in the Gualala watershed has been added to the final TMDL.

Comment 22: The commentor states that a high level of timber harvest plans have been approved by CDF resulting in erosion. The commentor discusses problems in the Garcia drainage.

Response: As described in the TMDL, EPA also found that elevated levels of sediment have resulted from roads and timber harvest in the Gualala watershed.

Comment 23: The commentor states that the Regional Board's analysis of roads added fundamental information on sediment delivery. The commentor also reiterated and agreed with many of the TSD's findings on roads.

Response: EPA has retained the analysis of roads in the final TMDL.

Comment 24: The commentor states that the sediment source analysis relies on the work of Matthews & Associates.

Response: The Regional Board contracted with the Information Center for the Environment (ICE) for photo analysis, not Graham Matthews & Associates.

Comment 25: The commentor states it is difficult to quantify sediment from aerial photographs.

Response: In the TSD and TMDL, sources of sediment in the Gualala watershed were analyzed using a combination of methods, including aerial photos, field work and GIS data. Aerial photo analysis was used to estimate quantities of sediment from larger erosion sources.

Comment 26: The commentor states that the loading analysis should be based on three methods - comparison of impacted and unimpacted basins, linkage between sources and instream conditions, and comparison of historical instream conditions.

Response: In the Gualala TMDL, EPA is estimating that the loading capacity (i.e., the TMDL) for the Gualala River (475 tons/mi<sup>2</sup>/yr) is 125% of the estimated background sediment load (380 tons/mi<sup>2</sup>/yr). The approach of taking 125% of background as the estimate of the loading capacity is based on the theory that it is not the absolute amount of sediment that is critical for salmonids, but the extent to which current

sediment loading exceeds background levels. This approach was originally developed for use in the South Fork Eel sediment TMDL where the use of 125% was supported by information for the Noyo River which showed that salmonid populations were relatively high during a period when sediment delivery was about 125% of background.

Comment 27: "Timber harvest unit assessment is absent. If present, indications from such assessment would be that harvest units do play a significant factor in mass wasting and surface erosion."

Response: The draft and final TMDL estimated the amount of sediment resulting from "Skid Trail Surface Erosion" and "Other Harvest Related Delivery" (sediment related to timber harvesting, but not related to roads). This was approximately 15% of the human-caused sediment.

Comment 28: The commentor makes several comments regarding attainment strategy for timber harvest.

Response: The authority for implementation planning resides with the Regional Board. EPA will provide a copy of the public comments we received on the draft TMDL, including those pertaining to implementation, to the Regional Board for their consideration during development of an implementation plan.

Comment 29: "Land management related fluvial erosion was not evaluated because of the lack of existing data."

Response: The TMDL includes an analysis of fluvial erosion based on data collected at random field plots. Most of these field plots were located on industrial timber company lands. Therefore, land management related fluvial erosion was, in fact, evaluated.

Comment 30: The commentor discusses the inexact nature of linkage analysis and states that the linkage analysis was sufficient and supports the general conclusions that sediment loadings must be reduced.

Response: EPA is retaining the methods and calculations used to determine the loading capacity in the final TMDL.

Comment 31: "The (sediment) reductions sought...are appropriate."

Response: EPA is retaining the load allocations in the final TMDL.

Comment 32: "...erosion from harvest sites are not given their appropriate allocation..."

Response: In the TMDL, EPA sets allocations for sediment loads from skid trails and from "other harvest related delivery" that are much reduced from the sediment

produced by both current practices and legacy erosion sources still delivering sediment.

Comment 33: “Allocations from surface erosion from skid trails have not been properly analyzed nor have they received their appropriate percentage reduction goal.”

Response: EPA has expressly estimated the current level and set a load allocation for surface erosion from skid trails in both the draft and final sediment TMDL.

Comment 34: The commentor references an inclusion of an explicit margin of safety by increasing the overall percent reduction needed.

Response: EPA policy allows for the use of either an explicit or implicit margin of safety. EPA believes that the use of an implicit margin of safety is appropriate in this TMDL, because the assumptions in the analysis adequately account for uncertainties.

Comment 35: “The TMDL clearly accounts for seasonal variation.”

Response: EPA has retained the seasonal variation discussion in the final TMDL.

Comment 36: The commentor discusses implementation program ideas and monitoring suggestions.

Response: The authority for implementation planning resides with the Regional Board. EPA will provide a copy of the public comments we received on the draft TMDL, including those pertaining to implementation, to the Regional Board for their consideration during development of an implementation plan.

Comment 37: The commentor submits rebuttal to “technical comments commonly supplied by Industry on TMDLs.”

Response: Because the commentor is not commenting on the TMDL and EPA did not receive any “industry” comments, no response is needed.

### **Chris Poehmann, Coastal Forest Alliance**

Comment 1: The commentor discusses his impression that Gualala Redwoods did not allow access to all random field plots. He recommends adding ample safety factors to all the target levels, given that the areas represent the most active harvest areas.

Response: The commentor is correct that Gualala Redwoods did not allow access to the Regional Board for field work. However, the aerial photo analysis covered the entire watershed, and the sediment found in the field work was extrapolated over the entire watershed. Also, the draft TMDL was developed using a number of conservative

assumptions as described in section 5.3 of the draft TMDL (Margin of Safety). EPA does not believe that additional safety factors are necessary.

Comment 2: The commentor states that the sediment source analysis relies on the work of Matthews & Associates.

Response: The Regional Board contracted with the Information Center for the Environment (ICE) for photo analysis, not Graham Matthews & Associates.

Comment 3: The commentor notes high levels of turbidity have been measured.

Response: Suspended sediment samples were taken by the Regional Board during development of the TSD, but the data is inconclusive. Due to the lack of rainfall, flows throughout the winter were relatively low. Thus, insufficient samples were collected during high flows, which is when higher suspended sediment and turbidity typically occur. EPA is unaware of other turbidity or suspended sediment sampling in the Gualala. If other data on turbidity in the Gualala exist they should be submitted to the Regional Board.

Comment 4: The commentor recommends turbidity as a target. He notes that turbidity can give a much quicker and easier to measure response than most other measurable parameters.

Response: The draft and final TMDLs include two turbidity and one suspended sediment targets.

Comment 5: The commentor discusses temperature needs, riparian condition, overwintering and large woody debris habitat, and indicates that these factors need to be discussed more in the TMDL.

Response: The State of California has listed sediment as the pollutant that is causing impairment of the Gualala River. Thus, this TMDL focuses specifically on sediment. Although some information on non-sediment factors is included in the TSD, neither the TSD or TMDL is a watershed assessment where all possible factors that could affect fish are assessed.

Comment 6: The commentor recommends assessment of logging and increased sediment; percent area disturbed and instream habitat; peak flows and logging and/or conversions to vineyards; and, road miles, ditches and other sites of hydrologic connectivity.

Response: These types of assessment would require more information than is available.

Comment 7: The commentor recommends including land use tables (by planning watershed) of % of activity, and type of silvicultural technique and road density.

Response: A table showing road densities by planning watershed has been added to both the TMDL and TSD. The North Coast Watershed Assessment Program (NCWAP) is compiling much of the data recommended by the commentor, however, this information is not yet available.

Comment 8: Skid trails are not included and are a major erosional process.

Response: EPA agrees that skid trails are an important source of sediment. In the draft TMDL, EPA identified a load allocation for skid trail surface erosion (5 tons/mi<sup>2</sup>/yr) that is considerably lower than the estimate of current surface erosion from skid trails (30 tons/mi<sup>2</sup>/yr). The load allocation for skid trail surface erosion is retained in the final TMDL.

Comment 9: The commentor states that a high level of THPs have been approved by CDF. The commentor discusses problems in the Garcia River drainage.

Response: In the TMDL, EPA estimates the amount of sediment resulting from skid trails and harvest related delivery other than roads. This is approximately 15% of the human-caused sediment.

Comment 10: The commentor discusses Class III watercourses and field assessment and protection measures.

Response: This comment relates to implementation. The authority for implementation planning resides with the North Coast Regional Water Quality Control Board (Regional Board.) EPA will provide a copy of the public comments we received on the draft TMDL, including those pertaining to implementation, to the Regional Board for their consideration during development of an implementation plan.

Comment 11: "Additional attention and inputs are needed to assess the potential impacts of forestland conversion."

Response: In the TMDL, EPA assesses current sediment delivery from current and past land uses. Information is not available to project changes in land use in the Gualala.

Comment 12: "...Road related sediment inputs should be broken out and allocated to their associated land use."

Response: The information required to make such a distinction is not available.

Comment 13: “The TMDL should note the average roaded area is 4.6 miles per square mile.” The commentor suggests analyzing the density of seasonal roads, as these roads have a higher potential for failures.

Response: A table on road density has been added to the final TMDL.

Comment 14: “Timber harvest unit assessment is absent. If present, indications from such assessment would be that harvest units do play a significant factor in mass wasting and surface erosion.”

Response: In the TMDL, EPA estimates the amount of sediment resulting from skid trails and harvest related delivery other than roads. This is approximately 15% of the human-caused sediment.

Comment 15: The commentor makes several comments regarding attainment strategy for timber harvest.

Response: The authority for implementation planning resides with the North Coast Regional Water Quality Control Board (Regional Board.) EPA will provide a copy of the public comments we received on the draft TMDL, including those pertaining to implementation, to the Regional Board for their consideration during development of an implementation plan.

Comment 16:” Land management related fluvial erosion was not evaluated because of the lack of existing data.”

Response: The TMDL includes an analysis of fluvial erosion based on data collected at random field plots. Most of these field plots were located on industrial timber company lands. Therefore, land management related fluvial erosion was, in fact, evaluated.

Comment 17: The commentor discusses the inexact nature of linkage analysis and states that the linkage analysis was sufficient and supports the general conclusions that sediment loadings must be reduced.

Response: The final TMDL retains the methods and calculations for determining the TMDL and loading capacity.

Comment 18: “...erosion from harvest sites are not given their appropriate allocation...” Linkages (in areas) with intense harvest would suggest greater allocations in these areas.

Response: The load allocations in the TMDL are not established for various locations as suggested by the commentor. Instead, allocations are provided for the various sources of sediment.

Comment 19: "Allocations from surface erosion from skid trails have not been properly analyzed nor have they received their appropriate percentage reduction goal."

Response: In the draft TMDL, EPA identified a load allocation for skid trail surface erosion (5 tons/mi<sup>2</sup>/yr) that is considerably lower than the estimate of current surface erosion from skid trails (30 tons/mi<sup>2</sup>/yr). The load allocation for skid trail surface erosion is retained in the final TMDL.

Comment 20: The commentor recommends reviewing the uncertainties and potentially increasing the margin of safety.

Response: EPA believes that the use of an implicit margin of safety is appropriate in this TMDL, because the assumptions in the analysis adequately account for uncertainties.

Comment 21: The commentor agrees with the Regional Board's proposal that "given the watershed's impaired status, any measurable discharge of sediment be considered deleterious...and that the prohibition apply to all land uses.." and be adopted into the basin plan.

Response: This comment pertains to implementation, not the TMDL. EPA will provide a copy of the public comments we received on the draft TMDL, including those pertaining to implementation, to the Regional Board for their consideration during development of an implementation plan.