

US EPA ARCHIVE DOCUMENT

**BIG RIVER SEDIMENT TMDL
SUMMARY OF COMMENTS AND RESPONSES**

Prepared by USEPA, Region 9, Water Division (WTR-2), San Francisco
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COMMENTORS:

David Leland, North Coast Regional Water Quality Control Board (via email, regular mail)
Chris Surfleet, Mendocino Redwood Company (via email)

INTRODUCTION

This document summarizes the comments that were submitted, identifies the commentor (at the end of the comment), responds to the comments, and summarizes changes that were made to the final TMDL. They are arranged by topic wherever possible. When multiple comments were received on a single topic, the multiple commentors are identified under the single comment. Any change that is made to the TMDL in response to the comment is summarized in the response. If no change is noted in the response, then no change was deemed to be needed in the TMDL.

Summary of Changes to the Final TMDL

Several changes were made to the final document as a result of public comment. These include: changes to the text to reflect errors and omissions, as well as additional information brought to EPA's attention; deleted references to the relative disturbance index and the associated figure and table; changes to the text to eliminate suggestions that the impairment is "moderate"; and changes to the text and references to include the recently-updated NCRWQCB document and the new information included in a commentor's letter.

COMMENTS AND RESPONSES

PROBLEM STATEMENT

Comment 1: We believe that data regarding instream conditions show greater than moderate impairment. Other instream sediment parameters (high embeddedness, the lack of pool depth, the high turbidity and suspended sediments, the lack of data about V^* and background turbidity, and the potential underestimate of the sediment source analysis) indicate a greater than moderate impairment due to sediment. The fact is that salmonids are not abundant in the watershed and the factors that are limiting, if not sediment, are not discussed (Leland).

Response: EPA has changed the text for the indicators that suggest greater than moderate impairment, as well as degraded conditions and depressed salmon populations overall. The Mendocino Coast Assessment (NCRWQCB 2001) discusses other factors that are limiting to fish. Factors other than sediment that may be limiting to fish are not discussed in detail because the TMDL focuses on sediment,

the pollutant listed as the source of impairment under Section 303(d) of the Clean Water Act. In future 303(d) lists, the Regional Board may determine that the watershed should be listed for pollutants other than sediment, and may develop TMDLs for other pollutants.

Comment 2: The NCRWQCB 2001 reference on which you relied for much of the Problem Statement was finalized in September and some of the earlier references were deleted or changed as the chapters were consolidated. Additionally, there were occasional errors in some of the information that was extracted from the report as described below (Leland).

- Page 6: The beneficial use of water related to rare, threatened or endangered species (RARE) has been proposed for this basin as both coho salmon and steelhead trout, listed species under the federal ESA, are found in the watershed.
Response: The text now reflects this proposed beneficial use.
- Section 2.3, page 8, second paragraph: CDFG unpublished data should refer to unpublished data ‘h’ instead of unpublished data ‘a.’
Response: The text has been changed to reflect this change in the reference.
- Same paragraph: Highest densities of steelhead were observed in West Chamberlain Creek, not in Berry Gulch.
Response: Text was changed accordingly.
- Same paragraph: The draft TMDL reports that during CDFG surveys in the 1990s “YOY [young-of-year] coho salmon were only found on one occasion...”. This could imply that other age classes were seen. The only coho observed were YOY coho at Berry Gulch during these surveys.
Response: Text was changed accordingly.
- Section 2.3, page 8, last paragraph, line five: MRC [Mendocino Redwood Company] surveyed only one site in Daugherty Creek.
Response: The table shown on p. 147 of the original Mendocino Coast assessment and on p. 139 of the September update appears to show that two sites were surveyed in Daugherty Creek. Text was not changed.
- Section 2.3, page 8, last paragraph, line 14: MRC reported that YOY steelhead were observed in 116 events, not 16.
Response: Text was changed accordingly.
- Section 2.3, page 9, third paragraph: The U.S. Fish and Wildlife Service reported on electroshocking surveys in July and October.
Response: Text was changed accordingly.
- Section 2.5, page 11: The presence of the haul road within the riparian zone for long stretches of Two Log Creek further contributes to the high sedimentation. Blasting at a rock quarry located along the Two Log Creek in July of 2000 resulted in approximately 225 cubic yards of earthen material being deposited in the creek. Much of this material was excavated, but some volume of sediment remained in the stream channel. Increased logging in the Two Log Creek watershed has occurred recently. Roughly 80% of the watershed has been or is proposed for harvesting between 1991 and the present (ten years).
Response: A summary of this discussion has been added to the text. From the CDF database of Timber Harvest Plans (THP), GMA (2001) determined that 46% of the Two Log Creek subwatershed was harvested during the period 1989-2000. The Regional Board’s estimate of harvest acreage from THPs may differ from CDF’s estimates provided to EPA.
- Section 2.6, page 12: The document states: “Although data do not exist to confirm explicitly that a similar sequence of events occurred in the Big River watershed, the current condition certainly

resembles that in Caspar Creek, of a deeply entrenched stream system, in many places cut down to bedrock, lacking functional floodplains, and substantially depleted in large instream woody debris.” Can additional information be provided to establish a stronger link between the logging dam operations impact on sediment delivery in Caspar Creek and the situation in the Big River?

Response: EPA is not aware of additional data that are specific to the Big River watershed. However, the existing discussion is sufficient for the descriptive purposes of the discussion in the TMDL. EPA encourages the Regional Board to collect additional data in the watershed if they wish to further strengthen the analysis.

WATER QUALITY INDICATORS

Comment 3: Riffle embeddedness is a useful indicator tool for assessing habitat conditions, but it is qualitative and subject to individual interpretation, and therefore an unreliable indicator of changes over time. MRC suggests removing this target (Surfleet).

Response: EPA acknowledges that the target is subject to some individual interpretation. However, EPA believes that as an improving trend, evaluated on a weight-of-evidence approach with the other indicators over the long term, the indicator will be adequately reliable and will be useful for assessing conditions relative to sediment, for the purposes of the TMDL.

Comment 4: A target of greater than 40% pool habitat is a reasonable target for a “good” pool frequency in the Big River watershed, at least until better information is available. Flosi suggests that greater than 40% of habitat length in pools and that pools greater than 3 feet in depth are desirable. The TMDL combines these two factors, which is not consistent with Flosi’s report, and is probably an unachievable target, because smaller streams are unlikely to achieve even two foot pool depth on a regular basis. Commentor included charts based CDFG surveys of South Fork Noyo River and South Fork Caspar Creek on two dates in 1995 (no reference provided), comparing mean width and maximum pool depth, to suggest maximum pool depth is limited by stream width, and that pools deeper than three feet do not occur for streams that average less than 15 feet wide. Commentor supports the use of a mean of maximum residual pool depths corrected for stream width as the best indicator of pool habitat quality because it considers the variability in pool depths across a stream reach. (Surfleet).

Response: EPA used the reference from Flosi et al. (1998), as reported by the Regional Water Board (2001). The reference is appropriate as used in the TMDL. Flosi et al. (1998, p. V-15) states the following: “DFG habitat typing data indicate the better coastal coho streams may have as much as 40 percent of their total habitat length in primary pools. In first and second order streams a primary pool is defined to have a maximum depth of at least two feet, occupy at least half the width of the low-flow channel, and be as long as the low-flow channel width. In third and fourth order streams the criteria is the same, except maximum depth must be at least three feet.” EPA will retain the target as described, which is for an increasing trend of primary pools, as defined by depth, toward 40% by length. The target does not state that all stream reaches must have 40% primary pools at all times, but a trend toward this would reflect better stream conditions. Regional Water Board may choose to modify the indicator in the future, if monitoring data suggests that it is appropriate.

Comment 5: In our opinion the turbidity target is impossible to conclusively measure without considerable resources and time. MRC suggests that this target and subsequent language in the basin plan be put for review with qualified scientists (Surfleet).

Response: The turbidity target was included to reflect the existing water quality objective in the Basin Plan. Accordingly, EPA feels that the target should remain in the TMDL. However, it is EPA's understanding that the Regional Water Board may consider revising the turbidity objective in the future to reflect ongoing developments in scientific understanding. The Regional Water Board may choose to modify both the water quality objectives and the TMDL targets in the future.

Comment 6: Although measures of aquatic insects can be useful tools for evaluating stream health, MRC cautions that meaningful results require considerable resources to obtain appropriate sample sizes, and MRC cannot use the technique on its ownership. MRC also cautions that comparing insect populations in the Big River to an index developed out of the area would be inappropriate (Surfleet).

Response: Responsibility for developing a monitoring plan, and details of monitoring methods lies with the Regional Board. However, EPA expects that a monitoring plan for aquatic insect production that does not require excessive resources could be developed, and would provide valuable information for MRC on its ownership. For example, EPA's Rapid Bioassessment Protocol (*Biological Criteria: Technical Guidance for Streams and Small rivers, Revised Edition (1996), EPA/822/B-96/001*) has been designed for simple monitoring and analysis, and requires classification of aquatic insects into broad categories, while still providing information from which to assess water quality. This has been used successfully in many regions nationwide for water quality assessment and in some cases, to set biologically-based water quality standards. References can be developed for watersheds or ecoregions, provided that similar conditions are present (e.g., habitat, flow, etc.), and the California Department of Fish and Game has developed a standardized protocol for assessing biological and physical/habitat conditions of wadeable streams in California. No target threshold has been set for this indicator, as no appropriate target level has been determined for the Mendocino Coast region. However, improving trends in the indicator will reflect improving conditions in the streams. Furthermore, the California Department of Fish and Game has been working with local information in the North Coast to identify appropriate indicator conditions in the region. We encourage both MRC and the Regional Board to develop a workable monitoring program that includes this indicator.

Comment 7: Diversion potential is probably an unnecessary target, as this is already required in the California Forest Practice Rules, and failure of <1% in a 100-year storm is unreasonable. The standards for road construction, maintenance and monitoring are appropriate. MRC suggests that high design standards for road crossings be the target, not a failure rate that seems unachievable (Surfleet).

Response: The Forest Practice Rules only apply to timber harvesting. EPA believes that the diversion potential target is appropriate, as explained in the TMDL. The targets are not enforceable on their own, but they should be used to evaluate progress toward achievement of water quality standards. We expect that all the targets will be evaluated on a weight-of-evidence basis; therefore, occasional failure of individual targets to be achieved on an instantaneous basis in the midst of significant progress toward achievement of targets overall and over time would not be evaluated as regression.

Comment 8: A target of reducing road hydrologic connectivity to <1% is unreasonable, and MRC suggests that high design standards for road crossings reducing hydrologic connectivity would be a better target. MRC agrees that reducing hydrologic connectivity is valuable, but EPA is suggesting that water is better sent onto fill materials above road crossings, and to place roads on mid-slope areas in order to eliminate crossing headwall swales and inner gorge roads (Surfleet).

Response: EPA believes that high road design standards will reduce hydrologic connectivity adequately over time; however, the Regional Water Board will determine how this is done in its implementation measures. EPA is not suggesting that water be directed solely to road fills or solely to mid-slope areas, as

there are other options available for road construction and design, such as locating roads at the ridgetops, or eliminating some roads altogether. Again, the implementation details will be addressed by the Regional Water Board.

Comment 9: The proposed disturbance index will typically show negative results for MRC, because the only variable that can be improved is the landslide rate. MRC now uses selective harvest techniques as opposed to clear cut techniques, so the harvest area factor will increase even with these better practices. Furthermore, the high road standards in the TMDL suggests roads being closed and made hydrologically maintenance free, which MRC is attempting to include in its road management, but some roads will remain. Given MRC's selective harvest approach and attempts at closing roads appropriately, the disturbance index for our practices will always be high. Is this what EPA intends? In addition, the relationship that shows relative disturbance to substrate quality is weak (Surfleet).

Response: EPA commends MRC efforts at improving its road building practices, eliminating unused roads, and improving harvesting techniques. The disturbance index in the draft TMDL was provided as an example of an index that could be used. However, EPA agrees with the commentor that the relationship is weak. Therefore, we have eliminated the reference to that specific disturbance index, and we hope that the Regional Water Board will develop a more appropriate disturbance index to reflect improvements in chronic sediment inputs to the system.

Comment 10: In general, a more complete description of the derivation of the target values would be helpful (Leland).

Response: The commentor did not provide suggested language or specify in what manner the description could be more complete. EPA believes that the discussion in the TMDL is adequate. EPA worked with the Regional Board and the National Marine Fisheries Service to develop targets representative of good stream conditions. The TMDL describes the basis for the target values.

Comment 11: Table 3, Targets: Road-related sediment in this watershed is too high for properly functioning conditions. In order to reduce the amount of road-related sediment, the number and lengths of roads should be reduced. Perhaps this could be accomplished by changing the scope of the existing target for roads so that all roads in the watershed are included, not only the roads adjacent to streams. In the Gualala River watershed, roads were found to be the largest source of sediment to the river. The road density in the Gualala River watershed is about 5 mi/mi² (Leland).

Response: The water quality indicators sufficiently describe watershed conditions related to roads in a manner that will lead to achievement of water quality standards. The TMDL and load allocations for road-related sediment identify an acceptable load from sediment. While reductions in the road density or overall road lengths will probably result in overall reductions in road-related sediment, EPA believes that determining how to meet the TMDL allocations is the responsibility of the Regional Board, through its implementation measures. The Regional Board may determine that reduced road density is appropriate for its implementation measures in this watershed.

Comment 12: Page 16 states: "...all but two of the 16 sample locations had values within the target range of < 14%." Additionally, on page 26 it is stated: "The portions of the watershed with greater relative disturbance values did have somewhat higher percentages of fines in the spawning gravels. It should be noted, however, that the values of percent fine sediment found throughout the watershed are all indicative of only moderately impaired spawning gravels. There is little indication that the presence of fine sediment <0.85 mm in spawning gravels is currently a significant limiting factor to fish populations." (Leland).

Response: See response to Comment 1.

Comment 13: Page 17, Table 4: It should be noted that the units are % dry weight. Should the heading of the column currently titled “% Exceeding Size Fraction (mm)” be “% Less Than Size Fraction?” (Leland).

Response: The notation has been added, and the column heading has been modified.

Comment 14: Page 18: Thank you for pointing out the error in the NCRWQCB 2001 document. The data regarding embeddedness in West Chamberlain Creek that you need to complete your description of conditions are presented. Commentor noted various changes in the embeddedness description to more accurately reflect the original data source (Leland).

Response: The text was adjusted to reflect commentor’s corrections.

Comment 15: Pages 20 & 21: We agree with the draft TMDL that turbidity values are elevated. Literature values also support that conclusion, providing some thresholds for the impact of turbidity on salmonids. Background levels are necessary to determine whether the levels meet target values and the lack of this information is a serious deficiency. In the absence of the information needed to compare the turbidity values to background levels, information reported in the literature about salmonid response to turbidity levels can help to explain the potential relevance of the turbidity data to beneficial uses even in the absence of background data. The data provided in the draft TMDL show that streams in the Big River watershed have average values above values the literature report as creating adverse conditions, even if the lack of data do not allow a definitive comparison to the target values. Similarly, the data provided in the TMDL show that the maximum reported values in the watershed are far above the literature values indicating habitat impairment. It is imperative that data regarding flow and duration be collected so that the true impact can be estimated. The data presented in Table 5 would be more meaningful if some estimate of the range in variation were provided in addition to the average and maximum values, especially given the large difference between the average and maximum values. Commentor provided a table summarizing their review of literature-reported turbidity effects (Leland).

Response: The text has been modified to reflect the Regional Board’s statement that the data reflect adverse conditions for salmonids, even though it is not possible to determine whether the target values and water quality objective are exceeded, due to lack of information on background levels. EPA utilized the best available information to describe existing conditions for this indicator in the watershed, and we encourage the Regional Board to collect additional data in the future to address data gaps. In addition, we encourage additional analysis to update the water quality objective to reflect ongoing scientific developments and to add information regarding flow relationships and durations of turbidity values. Additional detail on the turbidity values presented in the TMDL will be provided to the Regional Board for their analysis. However, EPA believes that the information as presented in the TMDL is adequate for the description of watershed conditions.

Comment 16: For the LWD target, please explain what is meant by a “key piece.” The Aquatic Properly Functioning Matrix by NMFS (March 1997) might be a useful reference for this. The density of trees in the riparian zone to provide for recruitment of LWD could be specified as a hillslope target. Again see the NMFS report (23.8 trees per acre >32-inch DBH for redwood stands and 17.4 trees per acre greater than 40-inch DBH for Douglas fir stands, or 16.3 to 18.5 trees greater than 30-inch DBH for Douglas fir stands depending on site class). The Scientific Review Panel Report, June 1999, page 42 also might be helpful (Leland).

Response: A “key piece” of LWD is intended to be of a size that is important for salmonid use in the stream. The indicator is designed to be flexible; i.e., either increasing distribution of key pieces, or increasing distribution of LWD-formed habitat. The text has been modified to clarify this. Because the Regional Board will be developing implementation and monitoring measures, EPA encourages the Regional Board to describe size characteristics of key pieces according to its own analysis.

Comment 17: On page 22, the description of LWD *Conditions in the Watershed* is not clear that the information presented is from CDF for the Jackson Demonstration State Forest – not the entire watershed. The specific JDSF data may not be applicable to the remainder of the watershed (Leland).

Response: The text has been modified to reflect that CDF presented information for Jackson Demonstration State Forest (JDSF).

Comment 18: Commentor provided several comments on the Relative Disturbance Index suggested in the draft TMDL, including statements that indicated the relationship is weak. Table 7, page 27: The percent harvested of Two Log Creek 1989-2000 in Table 7 appears to be incorrect regarding recent increased logging in the Two Log Creek watershed. The Regional Board Timber Harvest staff added the acreage of THPs for 1991-2001 THPs listed in a recently submitted THP 1-01-380 MEN (page 62) and determined that from 1991-2000, the total would be roughly 75% of the Two Log Creek watershed. Of course, this does include plans that may not have been completely implemented. We suggest that the percentages harvested shown in Table 7 are checked again because the Relative Disturbance Index may require modification (Leland).

Response: The Relative Disturbance Index has been deleted from the text. See response to Comment 9. Regarding the differences in timber harvest level estimates, see response to Comment 7.

SOURCE ANALYSIS

Comment 19: Regional Board staff is concerned that it appears that fluvial erosion associated with roads (stream crossing washouts and diversions, gully erosion, etc.) is not included in the Big River watershed sediment source analysis. Regional Water Board staff also is concerned that landslide features less than 75 feet in width or length are not included in the sediment source analysis and, therefore, that this analysis underestimates the sediment source. Fluvial erosion associated with roads and landslides smaller than 75 feet in length and width have been shown to be significant sediment sources in other areas of the north coast. If field verification had been used in addition to photo analysis, the analysis would have increased the quantification of small feature landslides (including those that are related to harvest and roads) (Leland).

Response: EPA agrees that fluvial erosion is a concern. The data available for the sediment source analysis did not allow a detailed assessment of the sources of all sediment. Although some field verification was undertaken, investigating fluvial erosion specifically associated with roads would have required more field investigation than was feasible. The sediment source analysis (GMA 2001) discusses the estimate of fluvial sources of erosion; a unit-area rate was determined using other studies in the region, and this would include some fluvial erosion associated with roads. EPA feels that this level of detail is adequate for the TMDL; however, EPA encourages the Regional Water Board to improve upon the analysis in the future and modify the conclusions from the sediment source analysis, and the TMDL, in the future, if the estimates are found to be inadequate.

Comment 20: Page 33: It would be helpful to clarify what the surface erosion rating system of “high, medium and low” translate into for skid trail erosion in tons/mi²/yr, if possible. A discussion of how the rates were developed should be included in the TMDL report for those that do not review the Sediment Source Analysis, including a statement about the strengths and limitations of the estimates for such an inherently variable process. Field verification of load estimates should be part of a future phase of the TMDL development and implementation (Leland).

Response: EPA has struck an appropriate balance between describing the technical aspects of the analysis and making the document readable to the average reader, so we are not adding further technical description to the TMDL. Rather, EPA encourages the commentor, and others who may also be interested, to review the description of the estimates in the source analysis, (GMA 2001, pp. 55 ff.). Estimating the sediment inputs from skid trails is complicated by several factors, including when the harvesting was conducted, the intensity of the harvesting, and the amount of time that has passed since the skid trail was first constructed and used. Furthermore, effects of past practices are extremely difficult to estimate, for erosion from skid trails as well as for sediment production from all sources. Earlier harvest techniques tended to be more intensive, and included more skid trail construction. More recent practices result in construction of fewer skid trails, and those that are built recently tend to erode less than those built in earlier periods. Separate unit area factors were selected for low, medium and high densities skid trail development for each of the source analysis periods, then the rates were adjusted over a period of years to reflect higher erosion initially, and decreasing erosion for the following 10 years. The factors and overall uncertainty are described in the sediment source analysis (GMA 2001).

LOADING CAPACITY AND ALLOCATIONS

Comment 21: The accuracy of load allocations is low, at best an order of magnitude. To suggest that certain sediment loads can be managed for, on a long-term averaged basis, is a reasonable hypothesis but very unpractical to measure or determine. Using the surface erosion model in the Standard Methodology for Conducting Watershed Analysis manual (Version 3.0, Washington Forest Practices Board), MRC calculated surface erosion from closed roads. Using data from the Big River Sediment Source Analysis (GMA 2001), suggesting a road density of 7 mi/sq. mi., a 1% hydrological connectivity (to meet the TMDL target), assuming no use of the roads, the model suggests 7 tons/mi²/year eroded. This gives the conclusion if any of the roads would be used there would be no possible way to meet a load of 16 tons/mi²/yr and roads on MRC lands will be used. The current estimated load of 90 tons/mi²/yr can be improved on, but in our opinion not to the level that EPA is suggesting (Surfleet).

Response: EPA has determined from its analysis that the allocations are appropriate. Because the analysis does involve some uncertainty, the Regional Board may choose to modify it in the future if additional information becomes available. The allocations are set to determine the level of pollutant that can be added to the waterbody and still meet water quality standards, not to maintain existing conditions. The Regional Board may determine in its implementation measures that existing road density may need to be reduced in order to meet the load allocations.

GENERAL COMMENTS

Comment 22: Mendocino Redwood Company (MRC) appreciates that EPA used MRC watershed data and presents targets of fish habitat and water quality that fit with measurements and observations that MRC currently are using (Surfleet).

Response: Comment noted. No response is required.

Comment 23: In reviewing the draft TMDL, Regional Board staff became aware of additional information that was not part of the NCRWQCB (2001) Mendocino Coast Assessment. This was our oversight but the additional data should be incorporated into the U.S. EPA Big River TMDL (Leland): (1) KRIS-Big has V* data for Berry Gulch, indicating a V* value of 0.38 in 1992. The same data source reports a similar V* value for Hare Creek of 0.37 in 1992; (2) In surveys conducted by G-P, Tom Dougherty reported that juvenile coho densities for the seven-year period of 1993-1999 averaged 0.11 fish per square meter in Two Log Creek; and (3) Data provided by Campbell Timberland Management, as part of the Two Log Creek blast, indicate that percent fines (<0.85) in Two Log Creek was 17.1 in 1996 and 19.8 in 1997.

Response: The V* value and % fines data have been added to the TMDL. The TMDL does not discuss coho densities in detail, thus the fish density data for Two Log Creek was not added to the document.

Comment 24: A few of the citations in the text of the draft TMDL lack an entry in the reference section (Leland), listed below.

Response: EPA has also added the commentor's letter as a reference, as it includes new information for the TMDL.

- Page 9: G. Bryant, personal communication.
Response: This citation was derived from EPA 2000b in the reference list, so the citation was modified in the text.
- Page 10: Tappel and Bjornn 1983.
Response: This reference was derived from the Mendocino Coast Assessment (NCRWQCB 2001), so the citation was modified in the text.
- Page 17: MRC, unpublished data
Response: This reference has been added to the list.
- Page 17: GMA unpublished data
Response: This reference is already in the list.

Comment 25: Some statements, including the following, should have a citation to assist the reader in evaluating the draft TMDL, or the statement should be revised so that a citation is not needed (Leland).

- Page 11, Section 2.5, first paragraph: "Recently-increased road building and timber harvest activities may cause additional degradation in the future, although the impacts are not yet reflected in current stream habitat conditions"

Response: This statement reflects EPA's analysis. No citation is needed.

- Page 11, Section 2.5, last paragraph: "Relative to some watersheds on the Mendocino Coast, habitat decline is not as severe, and coho are slightly more abundant in the Big River watershed than in some nearby watersheds."

Response: The statement was removed.

- Page 20, second paragraph: "Although turbidity levels can be elevated by both sediment and organic material, in California's North Coast, stream turbidity levels tend to be highly correlated with suspended sediment."

Response: A citation was added.

- Page 22, section 3.3: "Less than 1% of stream crossings have conditions where modification is inappropriate because it would endanger travelers or where modification is impractical because of physical constraints."

Response: A citation was added.

Comment 26: Page 25, paragraph 1: The term “headwall swales” is used but is not defined in the glossary (Leland).

Response: A definition has been added.

Comment 27: The North Coast Regional Water Quality Control Board is in the process of developing a region-wide Basin Plan amendment for sediment, and will develop subsequent watershed-specific TMDL implementation plans. The implementation strategies will address all sources of human-caused delivery of sediment to waters of the State (Leland).

Response: EPA encourages the Regional Board to promptly adopt measures that will implement the TMDL.