

TEN MILE RIVER SEDIMENT TMDL RESPONSE TO COMMENTS

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

December 13, 2000

COMMENTORS VIA EMAIL:

Hyla Bolsta (no address given)
Nancy Chao (no address given)
Mina Cohen (no address given)
Darcy Davis, Portland, OR (no address given)
Gerard Eisenberg (no address given)
Erica Fielder (no address given)
James Harrington, Fort Bragg, CA
Mary Rose Kaczorowski (no address given)
David Leland, North Coast Regional Water Quality Control Board, Santa Rosa, CA
BC Macdonald, Albion, CA, and Toni Rizzo, Fort Bragg, CA
Nansee New, Fort Bragg, CA (no address given)
Linda Perkins, MendoLake Group, Sierra Club
Chris Poehlmann, Gualala River Improvement Network, Annapolis, CA
Irene Thomas and Frank Howard, residents of Ten Mile watershed and members of Friends of the Ten Mile River
Judith Vidaver, Friends of the Ten Mile (no address given)
Leona Walden, Pacific Ridge Advertising, Mendocino CA

COMMENTORS VIA LETTER/FAX:

Craig Blencowe, Consulting Forester, Fort Bragg, CA
James Bybee, National Marine Fisheries Service, Northern California Habitat Manager, Santa Rosa, CA
Stuart Craig, Fort Bragg, CA
Robert E. Gustavson, Campbell Timberland Management, LLC, Region Manager, Fort Bragg
Gregory A. Jirak, Timber Watch, Point Arena, CA

INTRODUCTION

This document summarizes the comments that were submitted, identifies the commentor, and responds to those comments. 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: a brief discussion of the informal consultation with the Services under the Endangered Species Act; clarification of the text related to the status of coho salmon in the basin; changes to the habitat characteristics targets;

additional habitat characteristics; clarification of the temperature-related habitat characteristics indicator; clarification of one hillslope indicator; two additional hillslope indicators; additional detail of the source analysis; and selection of the more conservative of two proposed allocations methods and additional detail in the allocations. Tables 1 (Water Quality Targets), 3 and 4 (Habitat Characteristics Target Values and Current Values), 11 and 12 (Sediment Input Summary and Annual Unit Area Rates), and 13 (TMDL and Allocations) were modified to reflect the chosen TMDL and allocations levels, and additional detail from the source analysis. Table 14 (alternative proposed TMDL) was deleted.

COMMENTS AND RESPONSES

General Comments

1. *Comment:* Hawthorne Timber Company, LLC, managed by Campbell Timberland Management, LLC, which owns and manages the majority of the Ten Mile watershed, shares EPA's goal of restoring water quality in the watershed, and is one of the many resources we manage for in the watershed.

Commentor(s): Gustavson

Response: Comment noted. EPA appreciates all efforts to restore water quality in the watershed. EPA's data has been made available for Hawthorne/Campbell's continuing efforts.

2. *Comment:* The Ten Mile watershed is of extreme importance to the National Marine Fisheries Service (NMFS), and our 1995 Status Review of Coho Salmon identifies the Ten Mile River as containing the last native coho in the threatened Central California Coast Environmentally Significant Unit (ESU).

Commentor(s): Bybee

Response: Comment noted. This TMDL discusses impacts of sediment on salmonids, including coho. Text has been added to the document discussing the Endangered Species Act consultation process, as well as the likelihood of the RARE beneficial use being designated to the Ten Mile River as part of the upcoming Basin Plan update (D. Leland, pers. comm., 2000)

3. *Comment:* Little North Fork and Bear Haven Creek have shown consistent coho presence and should be viewed as critical refugia, still possessing the elements that enable coho to persist.

Commentor(s): Bybee

Response: Comment noted. The goal of the TMDL is to achieve water quality standards in all watercourses in the Ten Mile watershed, including non-degradation of critical refugia.

4. *Comment:* I support the recommendations made by the EPA regarding reducing siltation in the Ten Mile River.

Commentor(s): Bolsta, Chao, Cohen, Davis, Eisenberg, Fielder, Harrington, MacDonald & Rizzo, New, Perkins, Poehlmann

Response: Comment noted.

5. *Comment:* EPA's recommendations are a good beginning to reverse damage to the impairment. If implemented in time, with Friends of the Ten Mile's recommendations, it may not be too late for the remaining coho.

Commentor(s): Vidaver

Response: Comment noted.

6. *Comment:* I really want to see this area kept as pristine as possible and I do not want the concerns of industry to hurt it.

Commentor(s): Bolsta

Response: Comment noted.

7. *Comment:* The Ten Mile River is that last undeveloped estuary in Mendocino County-- a critical "nursery" for many aquatic species. The marine environment is also threatened by pollution in the coastal zone.

Commentor(s): Kaczorowski

Response: Comment noted. See also response to Comment 3, above.

8. *Comment:* Standards for stream protection should be modeled after the "Short Term HCP Guidelines" used by the National Marine Fisheries Service as the reference and guideline in their review of timber harvest plans, and recommended as standards by NMFS to the California Board of Forestry for their use in rule making and reviewing plans.

Commentor(s): Perkins

Response: The North Coast Regional Water Quality Control Board (Regional Water Board) may consider these standards when implementing the TMDL. EPA will forward comments and responses to the Regional Water Board for their consideration.

9. *Comment:* We urge you to approve the TMDL for the Ten Mile River and to help ensure that an Implementation Plan is amended into the Basin Plan by the North Coast Regional Water Quality Control Board and the State Water Resources Board.

Commentor(s): Perkins

Response: Comment noted. Federal regulations require the State to incorporate this TMDL, along with appropriate implementation measures, into the North Coast Regional Water Quality Control Board Basin Plan.

10. *Comment:* The TMDL Report has conclusive statements made from general or hypothetical, and often specious information extrapolated from other locations. Local, site-specific information, which reflects positively on the current conditions of the watershed, was not considered sufficiently in the report. Nor were background levels of sediment from unlogged watersheds in the area.

Commentor(s): Craig

Response: EPA considered all readily available information. Local, site-specific information was included in the overall information for the watershed, in the identification of targets, and in the development of the source analysis. The uncertainty in the analysis is addressed both in the TMDL and in the supporting documents. There are no unlogged watersheds in the area that EPA is aware of; however, EPA did consider information from studies in the Caspar Creek watershed.

11. *Comment:* I question the jurisdiction of EPA to set the TMDL standards to be imposed, and whether the standards are needed.

Commentor(s): Craig

Response: The Ten Mile River is included in the list of waterbodies that have been identified as not meeting water quality standards. EPA is required to establish this TMDL consistent with the Clean Water Act, Section 303(d), and under a consent decree (*Pacific Coast Federation of Fishermen's Associations, et al., v Marcus, No.95-4474 MHP, March 11, 1997*), because the State did not do so prior to 12/31/00.

12. *Comment:* The Ten Mile River watershed is exclusively on privately land. The EPA does not have jurisdiction over private timberland and forest practice activities in California. The California Board of Forestry does have jurisdiction here.

Commentor(s): Craig

Response: EPA has an obligation to develop the TMDL for the Ten Mile River watershed. See response to Comment 11.

13. *Comment:* The harsh economic affects of this proposal should be considered and weighed by elected government representatives before its imposition. This report, if implemented, may effectively destroy 50 to 75 percent of the value of private property in the watershed.

Commentor(s): Craig

Response: EPA is establishing the TMDL in accordance with the requirements of the Clean Water Act. It is EPA's understanding that the State's adoption process includes an economic review of its implementation plan.

14. *Comment:* Some may argue that the recommendations in the TMDL are excessive, limiting their ability to make a profit from the resources of the Ten Mile watershed. However, it must be remembered that the activities which have led to the Ten Mile River being listed as an impaired waterbody---destructive and unsustainable logging---have generated enormous profits for a succession of non-resident timber companies. These cut-and-run companies have returned nothing to the watershed and its beneficial uses from which they have derived their wealth. Campbell/Hawthorne Timber Company continues this legacy. Recently, logging trucks have been running from dawn till dusk seven days a week and many more potentially damaging logging plans are in the pipeline.

Commentor(s): Vidaver

Response: Comment noted.

15. *Comment:* The Bill of Rights of the U.S. Constitution protects landowners from seizure of their property.

Commentor(s): Craig

Response: Comment noted. This TMDL does not violate the U.S. Constitution.

Water Quality Targets

16. *Comment:* Targets need to be set that provide for progress towards the desired outcome or condition. The problem with setting specific numeric targets is that they many times hinder progress towards the desired condition. Progress towards the target is more important than the target itself. An implementation process that focuses on specific numeric targets can become gridlocked by not being able to address the specific numbers. Targets should be expressed as improving trends. This should apply to all targets, including instream, habitat characteristics and hillslope targets. Targets need to be adopted that are based on progress towards desired conditions and then adaptive management used to provide for continuing those trends.

Commentor(s): Gustavson

Response: Water Quality Targets are developed to describe a set of conditions that indicate adequate water quality and achievement of water quality standards. Some of the indicators are set as numeric targets, while others are set as improving trends, when that is more appropriate than setting an actual target value. EPA agrees that the focus should not be exclusively on target values to the detriment of overall water quality improvements, and that in some cases progress toward an improved condition is the appropriate target. Thus, EPA supports a weight-of-evidence approach in determining whether targets

have been achieved. In many cases, the indicators with actual target values are also set as 5- to 10-year running averages, to account for inter-annual variability. However, we disagree that progress alone is adequate and that achievement of water quality standards is not necessary. The indicators and targets are chosen to describe when water quality standards will have been achieved. EPA believes that the target values that are chosen are appropriate, and several additional indicators have been added in response to public comment, as discussed below. Modifications to the chosen indicators and targets can be considered by the NCRWQB if it revises the TMDL in the future.

Additional Water Quality Targets/Monitoring

17. Comment: I support all EPA's recommendations for additional water quality monitoring/ water quality monitoring protocols/ water quality management to ensure instream targets are being met.

Commentor(s): Bolsta, Chao, Cohen, Davis, Eisenberg, Fielder, Harrington, Jirak, MacDonald & Rizzo, New, Perkins, Poehlmann, Thomas & Howard, Vidaver, Walden

Response: Comment noted. EPA assumes that the commentors are expressing support for the Habitat Characteristics indicators. Additional monitoring or monitoring protocols may be developed by the Regional Water Board during the process of adopting and implementing the TMDL.

Habitat Characteristics Targets

18. Comment: EPA recommendations for Habitat Characteristics targets are reasonable and should be adopted.

Commentor(s): Bolsta, Chao, Cohen, Davis, Eisenberg, Fielder, Harrington, Kaczorowski, MacDonald & Rizzo, New, Perkins, Poehlmann, Vidaver, Walden

Response: Comment noted.

19. Comment: The use of the Habitat Characteristics indicators provide a good way of acknowledging some of the function of LWD and scour pools in the ecosystem, an indication of sediment metering and as the most widely used coho habitat by your document. As non-enforceable targets they should not be viewed as threatening by the public, but rather as just indicators of stream and habitat function. Their inclusion as part of a five or ten year survey plan is appropriate. However, I do have concerns about the actual numbers chosen as the targets, because they are the lowest values for those streams identified as having coho salmon presence. The proposed target values match those found in Smith Creek, which does not consistently possess habitat elements that enable coho to persist. These will not indicate adequate coho habitat. It is important to set proper targets in the TMDL because the public may seize upon them as a final goal. It would be prudent to amend the Table Three target values to values representative of the Little North Fork Ten Mile River, which is the best coho stream in the watershed, and consistently returned coho salmon for spawning and rearing.

Commentor(s): Bybee

Response: EPA agrees, and we have amended Tables 3 and 4 to reflect the values of the Little North Fork Ten Mile River. These are better target values for providing adequate aquatic habitat, and therefore better reflect conditions that meet water quality standards. The text has also been modified to reflect this change.

Pools and Pool Types

20. Comment: A percent pools indicator of 40% should be added. This indicator is proposed by Flosi et al. (1998) and has been used in other North Coast sediment TMDLs as well as being mentioned throughout your document. The Little North Fork Ten Mile River is the only spawning reach that also has >40% of its habitat length in pools. In addition, scour and/or LWD-formed pools may account for a substantial portion of the inventoried pool habitat in the Little North Fork Ten Mile River. In those

waterways where coho have been observed, the majority of their pool habitat is lateral scour pools (Mangelsdorf and Clyde, 2000), indicating the dominance and importance of this pool type. Over 60% of the pools in the four coho utilized tributaries are lateral scour pools. NMFS also recommends a target for improving trends in the number of backwater pools in the watershed as the Mangelsdorf and Clyde (2000) analysis identifies a distinct lack of these pools throughout the basin.

Commentor(s): Bybee

Response: As the primary agency responsible for the recovery of coho salmon, NMFS has noted that the Ten Mile River watershed is particularly important. In response to this request by NMFS, and in order to recognize the apparent importance of these indicators and the watershed as a whole to the survival of coho salmon, EPA has expanded the Habitat Characteristics indicators to include increasing number of locations with >40% of the habitat length in pools, and increasing number of scour pools, and an increasing number of backwater pools. Tables 1, 3 and 4 and the text have been modified to reflect this change.

Embeddedness

21. *Comment:* Another instream indicator I would recommend including is percent embeddedness. This watershed is identified in Ambrose et al. (1996, in Mangelsdorf and Clyde 2000, Table 28) as suffering from high levels of embeddedness in most of its waterways. The vast majority (20 of 25) of the waterways surveyed had >75% of their substrate (cobble, gravel and/or boulder) embedded by fine sediment. This data clearly reflects poor spawning, incubation and emergence conditions for coho as well as poor conditions for aquatic insect production. Since there are already data sets to use as a baseline condition, this indicator would be extremely helpful in determining if reductions in fine sediment loading are occurring.

Commentor(s): Bybee

Response: EPA agrees that the majority of the surveyed streams in the watershed have embedded gravels, which could limit spawning, incubation and emergence success as well as conditions for aquatic insect production. Due to the critical conditions for coho in the watershed, an indicator for embeddedness has been added to the Habitat Characteristics indicators, and Tables 1, 3 and 4 and the text have been modified to reflect this change.

Aquatic Insects

22. *Comment:* The use of an aquatic insect production indicator is also recommended. Improving trends in the EPT (mayflies, caddisflies and stoneflies), percent dominant taxa and richness indices are called for in the Van Duzen Sediment TMDL. These indicators are of value because benthic macroinvertebrate populations are greatly influenced by water quality and often detrimentally affected by excess fine sediment in streams. The EPT index may be the most useful in this case as these orders require higher levels of water quality and rapidly respond to improving or degrading conditions (Bjornn et al, 1997; Van Duzen River and Yager Creek TMDL for Sediment, 1999). Ambrose et al. (1996) did a macroinvertebrate study that was very good and could serve as the baseline for future surveys.

Commentor(s): Bybee

Response: Due to the critical conditions for coho in the watershed, an aquatic invertebrate indicator has been added, Tables 1, 3 and 4 and the text have been modified to reflect this change, as requested by NMFS.

Temperature

23. *Comment:* I would also like to recognize the importance of the summer Maximum Weekly Average Temperature (MWAT) target value you have proposed. Although it seems implicit that excess sedimentation often leads to temperature problems (through increased stream surface area that intercepts

solar radiation as well as the lack of shade that often results from riparian vegetation removal or modification in timber harvested areas pre-Forest Practice Rules(FPRs)) this relationship is not often recognized unless a waterbody is on the 303(d) list for temperature impairment. There are strong indications in this watershed (Ambrose and Hines, 1998 in Mangelsdorf and Clyde, 2000) that the summer MWAT is an important component in determining coho presence and stream utilization. As a non-enforceable target in this watershed, its use should be acceptable to the public.

Commentor(s): Bybee

Response: Comment noted. This target is retained in the TMDL.

24. *Comment:* the acronym MWAT is introduced and is described as a Mean Weekly Average Temperature. This acronym has several definitions that are not in agreement with the definition presented in the draft TMDL. Hines and Ambrose (in their unpublished April 2000 draft paper) use MWAT to mean the maximum value of the weekly average (7-day average) of the daily maximum temperature. See Mangelsdorf and Clyde (2000) p. 61 and 62 for additional details and discussion. The weekly average temperature (WAT) would be the average of some temperature data over a period of a week. In the Ten Mile, Hines and Ambrose used the daily maximum as the basis for getting a weekly average temperature statistic. Mangelsdorf and Clyde (2000) then used the results of the Hines and Ambrose analysis to look at WATs that exceeded 16.8 C. The term MWAT in Mangelsdorf and Clyde (2000) is used to mean a threshold of suitability for coho. Terminology that would reflect all of this for use in Table 3 of the draft TMDL would be: % of summer that weekly average of daily maximum temperatures is less than (or greater than) MWAT metric of 16.8C. A shorter version could be: % of summer WAT < (or >) 16.8C, with the text making clear what the WAT is. The sentence at the end of paragraph 2 on p.20 then should read, "In addition, Mangelsdorf and Clyde concluded that monitoring locations where the Weekly Average Temperature (WAT), calculated as the 7-day running average of daily maximum temperatures, generally does not exceed a maximum value (MWAT) of 16.8C also correlated well with coho presence." For information purposes, the MWAT definition used in Mangelsdorf and Clyde (2000) is different than that used in the Navarro TMDL, which used a 7-day running average of all continuous temperature measurements, and defined MWAT to be the maximum value of the 7-day running average. Hence, in the Navarro TMDL there is one MWAT for each station-year of data. Ranges of values were developed as metrics to assess water quality conditions by comparison to the station-specific MWATs.

Commentor(s): Leland

Response: EPA has clarified the text. Because it is apparent that the same terms can be misinterpreted, EPA has more specifically defined the indicator as "seven-day running average of maximum daily temperatures." Tables 1, 3, and 4 and the TMDL text have been modified to reflect this clarification.

Hillslope Targets

25. *Comment:* For hillslope indicators, I recommend including a road location, surfacing and side casting indicator similar to those in the Redwood Creek and South Fork Trinity River Sediment TMDLs. An annual road inspection is also called for in those two TMDLs and would be an extremely valuable component of this plan as well. Roads are known and pervasive sediment contributors throughout the Northern California Coastal area. They seem to be a particular problem in portions of this watershed and these indicators will need to be closely tracked to determine if any meaningful implementation plan are enacted to reduce sediment loading. They could also be of importance in the future as portions of the North and Clark Forks are re-entered and prepared for harvest.

Commentor(s): Bybee

Response: EPA agrees that roads are the primary sources of sediment in the watershed, and has added an indicator for road location, surfacing and sidcasting, and an indicator for road inspection and

maintenance to the TMDL to reflect the need to address that watershed condition. Table 1 and the text have been amended.

26. *Comment:* EPA recommendations for Hillslope targets are reasonable and should be adopted, with one exception. EPA suggests that logging unstable areas be avoided, "unless the activity involves professional geotechnical assistance." Because 98% of recent landslides are caused by logging operations, no logging should be permitted in unstable areas.

Commentor(s): Bolsta, Chao, Cohen, Davis, Eisenberg, Fielder, Harrington, Jirak, Kaczorowski, MacDonald & Rizzo, New, Perkins, Poehlmann, Thomas & Howard, Vidaver, Walden

Response: EPA has clarified the language of the document to better reflect our intention. This target was intended to address primarily the watershed conditions related to locations and types of harvest and associated management activities that could destabilize the hillslope and trigger additional landslides. Based on discussions with Regional Water Board (Lundborg, pers. comm., 12/00), EPA believes that in most cases, activities in these unstable areas can be avoided, for example, through relocation of roads. The unstable areas should be avoided altogether if the activities are likely to increase sediment delivery to watercourses. However, in some cases where the unstable areas cannot reasonably be avoided, measures may be developed that could provide for management activities while preventing increased sediment delivery to watercourses. Review by a Certified Engineering Geologist should ensure that the watershed conditions are adequate for water quality protection. Measures to avoid additional sediment delivery may be determined or approved by the Regional Water Board in its implementation process. Table 1 and the text have been clarified to describe EPA's intention with the indicator, which EPA believes is adequate for the purposes of defining a indicators for achievement of water quality standards.

27. *Comment:* Until a thorough study of logging-related landslides is conducted it is impossible to determine the effectiveness of geotechnical assistance. Too often such assistance has shown itself either biased in favor of activity in unstable areas or is simply unable to predict precise impacts of such activity. We have seen this most recently on THP 380-97, where a certified engineering geologist approved a road on an unstable area which shortly thereafter slid into the Albion River. Also, slides may not occur for many years following logging--after the stumps have rotted or during unusually high precipitation, muddying the waters, so to speak, of direct cause and effect. Besides, according to the Basin Plan, minimizing impacts to a water-quality impaired water body is insufficient to restore the beneficial uses---impacts must be avoided. Therefore, Friends of the Ten Mile recommends prohibition of activities in unstable areas.

Commentor(s): Vidaver

Response: EPA believes that the indicator that was selected for unstable areas is adequate (see response to Comment 23.) EPA disagrees that completely avoiding unstable areas is necessary in all circumstances (H. Lundborg, pers. comm., 2000). Implementation measures to ensure that the targets are met and the TMDL load allocations achieved will be developed by the State, which will be provided with all comments and responses for their consideration.

28. *Comment:* No logging should occur on slopes greater than 60%.

Commentor(s): Bolsta, Chao, Cohen, Davis, Eisenberg, Fielder, Harrington, Kaczorowski, MacDonald & Rizzo, New, Poehlmann, Vidaver, Walden

Response: EPA assumes that this comment refers to the watershed indicator describing no activities in unstable areas. The Regional Water Board will develop implementation measures for the TMDL. See also response to Comment 26.

29. *Comment:* All methods of clear-cutting, including variable retention and clearcut strips, should be abolished.

Commentor(s): Bolsta, Chao, Cohen, Davis, Eisenberg, Fielder, Harrington, Kaczorowski, MacDonald & Rizzo, New, Perkins, Poehlmann, Thomas & Howard, Vidaver, Walden

Response: The indicators that are included in the TMDL, as well as the allocations calling for greatly reduced sediment delivery from harvest, will be adequately protective of the water quality. The Regional Water Board will develop implementation measures for the TMDL. EPA will provide these comments to the Regional Water Board for their consideration.

30. *Comment:* Broadcast burning and herbicide use are standard practices by the major landowner, and should be abandoned in favor of selective harvesting.

Commentor(s): Perkins

Response: See response to Comment 29.

31. *Comment:* FEMAT no-cut buffers should apply to all watercourses.

Commentor(s): Bolsta, Chao, Cohen, Davis, Eisenberg, Fielder, Harrington, Kaczorowski, MacDonald & Rizzo, New, Poehlmann, Vidaver, Walden

Response: See response to Comment 29.

32. *Comment:* Scientifically correct no cut no entry buffer widths should be required.

Commentor(s): Harrington.

Response: See response to Comment 29.

33. *Comment:* No logging should be allowed during winter months.

Commentor(s): Bolsta, Chao, Cohen, Davis, Eisenberg, Fielder, Harrington, Jirak, Kaczorowski, MacDonald & Rizzo, New, Perkins, Poehlmann, Vidaver, Walden

Response: See response to Comment 29.

34. *Comment:* The logging trucks reduce the quality of life here for humans, as well as other forms of life, with the loud noise and bad air they produce. Any reduction in their activity is helpful in so many ways, so anything we can do to reduce the continued destruction of this habitat is appreciated greatly.

Commentor(s): Bolsta

Response: Comment noted. This TMDL addresses sediment as a pollutant.

Sediment Sources - Roads

35. *Comment:* Roads have been identified as the greatest sources of sediment, therefore no new roads should be constructed.

Commentor(s): Bolsta, Chao, Cohen, Davis, Eisenberg, Fielder, Harrington, Kaczorowski, MacDonald & Rizzo, New, Perkins, Poehlmann, Thomas & Howard, Vidaver, Walden

Response: EPA agrees that roads are the greatest sources of sediment to the watercourse, and an indicator is included that adequately addresses this issue. This indicator calls for a decrease in the length of road that is hydrologically connected to a watercourse. Because the standards for road building today are higher than those built in previous periods, the length of road is often less important than the sediment that is potentially delivered from it to a watercourse, indicated by its hydrologic connectivity. This indicator would apply to existing and legacy roads as well as newly constructed roads, and should encourage both the decommissioning of older roads that continue to deliver sediment as well as constructing new roads to the highest possible standards. Furthermore, reduced sediment delivery from

roads is indicated by the TMDL and allocations. The reduced load allocations should also encourage better standards and decommissioning. Exactly how this is accomplished is to be determined by the Regional Water Board and the individual landowners.

36. *Comment:* New road construction should be minimized, and no new roads should be allowed in WLPZ. Use of unpaved or unrocked roads should be prohibited unless such use can be clearly shown to generate no new sediment load.

Commentor(s): Jirak

Response: See responses to Comments 25 and 35.

37. *Comment:* New roads should only be allowed if a “twice-equivalent length” of road is decommissioned, i.e., decommission the length that would reduce sediment input by a factor of at least twice that of the estimated input caused by new construction.

Commentor(s): Perkins

Response: See responses to Comments 25 and 35.

38. *Comment:* Roads that are not in use should be put to bed.

Commentor(s): Fielder

Response: See responses to Comments 25 and 35.

39. *Comment:* Use of unpaved or unrocked roads along watercourses for the purposes of resources extraction should be avoided during wet weather. Use of these WLPZ roads by resource extractors should be phased out.

Commentor(s): Bolsta, Chao, Cohen, Davis, Eisenberg, Fielder, Harrington, Kaczorowski, MacDonald & Rizzo, New, Perkins, Poehlmann, Thomas & Howard, Vidaver, Walden

Response: See responses to Comments 25 and 35.

40. *Comment:* WLPZ roads that have no alternative access should be rocked to the highest standard to prevent sediment input.

Commentor(s): Perkins

Response: See responses to Comments 25 and 35.

Road Erosion Estimates

41. *Comment:* The scope of the road investigation could not take the road locations into account, so conclusions drawn under the source analysis should be looked at closely, since ridgetop roads are not likely to contribute to watercourse sedimentation, yet the report assumes that ridgetop roads contribute the same sediment volume as roads along watercourses. Most of the newer roads have been ridgetop or higher in the slope to accommodate cable yarding, as in the case on the properties I manage. In many cases, we have abandoned old roads and skid trails in favor of cable yarding. This may be occurring throughout the watershed on a wider basis than the photos would indicate. I believe that road surface erosion estimate of 225 tons/mile/year is possibly artificially high and overestimates the actual volume of sediment reaching the watercourses. This would have a very significant impact on the final TMDL value for the watershed.

Commentor(s): Blencowe

Response: EPA agrees that it is probable that the amount of sediment generated from current roads may be overestimated; however, as noted in the TMDL and in the supporting source analysis (GMA 2000), the best available information was used to generate the source analysis, and factors were applied to the sediment production estimate to account for current practices, including more appropriate road locations.

Nevertheless, if the existing sediment estimation is high, then landowners should have little trouble meeting the reduced load allocations. For its implementation measures, the Regional Water Board may encourage landowners to submit more detailed road inventories or site-specific sediment source analyses, as was proposed for the Garcia River TMDL Implementation Plan. See also response to Comment 35.

42. Comment: Does the Ten Mile study account for roads which show up on the photos, but may have been abandoned, and from which very little sediment may be lost?

Commentor(s): Blencowe

Response: The roads analysis included both air photo analysis and analysis of CDF's GIS database. If the air photo analysis revealed that a road was decommissioned or otherwise vegetated and not apparently producing sediment, that road was not included in the overall road length, however, this occurred only where CDF roads from the past 10 years of THPs were corrected to the 1999 aerial photo mosaic. It is not possible to determine whether a road has been successfully decommissioned without a comprehensive on-the-ground road inventory. As a result, these roads were left in the database and the results are likely conservative. However, when detailed inventories are actually completed (such as in the Van Duzen watershed), old abandoned roads are often found to be very significant sources even when vegetated, as they were not put to bed using current standards, which are far more effective. In general, roads that were included in the database were only the main (i.e. haul) roads, most of which remain in use. It is possible that roads which may have been abandoned appear on the photos to be in use, and they would have been included.

43. Comment: Relying on assumptions without field checking is not necessarily a legitimate methodology of establishing a TMDL.

Commentor(s): Blencowe

Response: In accordance with the Clean Water Act Section 303(d) and its implementing regulations, EPA used best available information to develop the TMDL.

44. Comment: I am concerned about the Washington State study concerning road use (Reid 1981). I question the extrapolation to the Ten Mile since many logging roads in Washington are used year-round, whereas winter use of Ten Mile Roads is virtually non-existent. Seasonality of use would have an effect on sediment production. The report notes that it has its limitations in that the similarity between the Mendocino and Clearwater basins is unknown

Commentor(s): Blencowe, Craig

Response: EPA used the best available information to estimate sediment production from roads. See also response to Comment 42, which also addresses the sediment generation estimate.

45. Comment: The unstable sediment load in the Ten Mile primarily results from logging activities in the 1940s. Practices have since changed and are resulting in gradual improvement and reduction of sediment delivered to watercourses. Watercourse improvement projects such as upgrading of culverts, bridges and road drainage and construction improvements financed through timber harvest and sale are improving water quality above no-action scenarios.

Commentor(s): Craig

Response: EPA agrees that practices have changed since the 1940s (although this occurred primarily in response to the 1974 California Forest Practice Rules). In combination with other factors, including time, watercourse improvement projects, and "event hardening," i.e., that higher than background landsliding rates and high storms have combined to essentially pre-trigger hillside instability (L. Reid, pers. comm. 12/00), gradual improvement in conditions and reduction of sediment delivery has occurred. However, EPA disagrees that the existing sediment load can be blamed largely on activities in the 1940s.

Some unknown quantity of sediment from earlier periods probably remains in portions of the watershed, moving slowly downstream. However, the source analysis revealed that new sources of sediment have also contributed in recent periods, including the majority of road construction in the watershed, which occurred after the 1940s .

Sediment Sources - Timber Harvest

46. *Comment:* I am a Consulting Forester to the three largest non-industrial timberland owners in the Ten Mile (Smith, Parker and Miller properties), which comprise the Ten Mile Timberland Owners Watershed Group. They all contain long-term sustained-yield forest management plans which mandate selective harvesting, and they have voluntarily undertaken long-term temperature monitoring, complete road assessments to determine potential sediment sources and a prioritized road improvement schedule, permanent photo plots, and annual road inspection/maintenance and upgrades of all drainage structures, in order to determine impacts of their harvest operations on the watershed.

Commentor(s): Blencowe

Response: EPA encourages these practices, and the knowledge that you have gained on behalf of the non-industrial timberland owners will probably benefit them greatly during the implementation of the TMDL. EPA particularly encourages adequate inspection and maintenance of roads, as well as sustainable timber harvest practices.

47. *Comment:* Studies in the Ten Mile have shown a gradual improvement in stream conditions over the past seven years: the Hillslope Monitoring Program (CA Board of Forestry 1999) showed that sediment delivery to watercourses was reduced to very low levels when the Forest Practice Rules were followed. Some of the plots for this project were in the Ten Mile watershed. Fishery biologist David Hines reported on seven years of monitoring sediment movement in the Ten Mile River system (Hines 2000) which showed a steady downward trend in the percent of fine sediment, and is statistically significant in the North Fork. The McNeil samples are below the threshold of concern for good habitat quality and are improving, with a significant positive trend in the North Fork, during a period when there was continuing moderately high timber harvest activity. Hence a conclusion may be reached that timber harvest may be accomplished in this watershed without detriment and maybe even improvement of fish habitat.

Commentor(s): Craig

Response: EPA disagrees with the conclusions of the commentor. As noted in the TMDL, the McNeil sediment samples show primarily conditions well above the 14% concentration of fine sediment threshold. Some sample locations in the North Fork Planning Watershed suggest a positive trend; however, this may also be related to the relative lower levels of harvest in that area relative to the South Fork. Other sample locations revealed either no trend or steady state.

Skid Trails

48. *Comment:* With the advent of cable logging, many old skid trails have been waterbarred and abandoned, yet they still show up on photos. In general, skid trails contribute little sediment relative to truck roads. Are these trails still bleeding sediment or do they merely show up on the photos? Is it simply assumed that they continually contribute to sedimentation?

Commentor(s): Blencowe

Response: As with the sediment generated from roads, the skid trail estimates are made with some uncertainty. Skid trails were only assumed to deliver sediment for a 10-year period, after which there was no delivery, see GMA (2000) for detailed description of computation procedure. Estimates of current conditions are relatively low compared with previous periods, so it is possible that it is not significantly overestimated. However, because the estimated load is relatively low, the load allocations

would not actually call for a large reduction in the source. If in fact the analysis overestimates the erosion, then landowners would be able to readily meet the load allocations. See also response to Comments 41-44.

Linkage

49. *Comment:* Sediment inputs from increased logging on unstable soils has been a major problem in the Ten Mile River watershed, which has caused a decline in the fishery. Water quality and coho survival are linked. The health and well-being of salmonid populations depend on the health and well-being of associated watersheds and drainage basins. Human pressure is negatively affecting these habitats.

Commentor(s): Kaczorowski

Response: Comment noted.

50. *Comment:* The document notes that the relationship between instream sediment quantity and quality and coho distribution and abundance is still relatively obscure (page 12, paragraph 1), and it references hypothetical relationships, yet conclusions are made that current sediment input levels and coho reproductive success are directly related. Page 14 states, without support, that excessive stream-delivered sediment has resulted in not meeting water quality standards, and EPA concludes that reducing overall sediment loading rate is needed to facilitate achievement of water quality standards. Ocean influences and heavy fishing in the past are thought by many to be more related to coho decline than instream conditions in the Ten Mile. This should be covered in the TMDL.

Commentor(s): Craig

Response: EPA used best available information to determine the appropriate TMDL. The relationships between land activities such as timber harvesting, increased sediment production and decreased success of aquatic species such as salmonids have not been well *quantified*, but they have been extensively documented throughout the literature. It simply hasn't been *quantified* or described *explicitly*. The TMDL does acknowledge that outside influences are also factors in decline of fish populations. However, the TMDL strives to set loads for sediment that will result in achievement of water quality standards within the basin; these have been compromised due to increased sediment loads.

Allocations

51. *Comment:* I believe that the second alternative allocations strategy should be used for several reasons. Although the difference between the two is not large in the realm of sediment budgets, it could be significant to the portion of the stream where the deposition occurs. Granting the Alternative 1 allocation also does not seem justified when the percent reductions required in the other TMDLs is examined as compared to the Ten Mile River plan. Alternative 1 requires a 50% reduction in anthropogenic sources of sediment. The seven other North Coast sediment TMDLs call for reductions in the range of 61%-82%. Alternative 2 follows the strategy used by EPA and the Regional Water Board in the Noyo, Navarro and South Fork Eel Sediment TMDLs. Similar reductions are appropriate for the Ten Mile. There does not seem to be a compelling reason why this watershed should be treated more leniently than the others that have recently had TMDLs established, particularly since the coho salmon population in this watershed is of particular importance.

Commentor(s): Bybee

Response: EPA agrees, and Alternative 2 has been established as the TMDL. Clarifications have also been made to the table and to the text. This is now Table 13, and the previous Tables 13 and 14 have

been eliminated. Tables 11 and 12 have also been modified to provide more information on the sources of management-related landslides. See also response to Comment 2.

52. *Comment:* Because the Ten Mile is critical habitat for coho salmon, Alternative 2--the 75% reduction of management-related sediment sources-- should be adopted.

Commentor(s): Bolsta, Chao, Cohen, Davis, Eisenberg, Fielder, Harrington, Jirak, Kaczorowski, MacDonald & Rizzo, New, Perkins, Poehlmann, Thomas & Howard, Vidaver, Walden

Response: See response to Comment 51.

53. *Comment:* The adoption of this TMDL needs to recognize the level and certainty of the analysis that is its base. Setting the TMDL and load allocations is only as good as the analysis on which they are based. The source analysis was primarily an indirect, office based approach. The best available data used for this analysis has limitations, since there was limited field reconnaissance and factors were selected to estimate conditions where no data existed to compute the results. Furthermore, conservative assumptions were used to accommodate uncertainties. The proposed TMDL and load allocations thus appear to be exact calculations, but they are not. Values adopted in this process will be no more than an indication of what needs to be done. Resulting programs and implementation measures should be based on progress toward these values, not on the values themselves. Because of this uncertainty, we believe that Alternative 1 for the load capacity is the more reasonable alternative. Also, since much of the analysis used the Noyo watershed and TMDL for comparison, selecting Alternative 1 seems logical.

Commentor(s): Gustavson

Response: EPA acknowledges uncertainty in the process. In accordance with our regulations and policy, we are obligated to incorporate a margin of safety in the TMDL, thus erring on the side of protecting water quality. Thus, EPA disagrees that Alternative 1 is the most appropriate. See also responses to Comment 51.

54. *Comment:* The only Alternatives under consideration are a 50 percent reduction and a 75 percent reduction. A new Alternative is needed as follows: Alternative 3 (Preferred) - Continued activities as regulated by the State Board of Forestry and do not impose the TMDLs.

Commentor(s): Craig

Response: EPA disagrees. A TMDL for the Ten Mile river is required under the Clean Water Act (CWA) because it is listed under CWA Section 303(d) as impaired due to sediment. See also responses to Comment 11 and 51.

55. *Comment:* The current TMDLs in the report are estimates from questionable data, the proposed reductions are based on uncertainty, and the linkage between coho reproduction success and sediment loads are unsupported. Yet implementation of these TMDLs would impose harsh restrictions on timber harvest. It appears that a 50-75 percent reduction in our means of survival is being proposed to move from the 98th to 99th percentile of water quality improvement. A case for the need of this level of improvement has not been made but would impose harsh reduction in income for residents depending on the timber resource.

Commentor(s): Craig

Response: EPA assumes that the commentor believes that the data are questionable, that there is uncertainty in the linkage and allocations, that the allocations are unreasonable and that the allocations would create a significant economic burden on residents. EPA disagrees, and EPA believes that the TMDL is based on best available information, the TMDL is adequately protective of water quality and the margin of safety adequately accounts for uncertainty. See response to Comments 13 (economic burden), 41-44 (source analysis and uncertainty) and 49-58 (linkage and allocations).

Allocations by Source

56. *Comment:* The total management landsliding percent reduction of 12% in alternative one is extremely low. Of the other TMDLs, the lowest percent reduction required where management related mass wasting is a concern is in the Garcia River plan which requires a 40% reduction. The other plans require from 50%-75% reductions. The 56% reduction called for in alternative two is much more in line with the other TMDL plans and probably with a volume capable of being stabilized in this watershed. It must also be noted that the Graham Matthews & Associates sediment source analysis (GMA 2000) identifies that the dominant source of landsliding in the North and Clark Forks is the result of roads.

Commentor(s): Bybee

Response: EPA agrees. See response to Comment 51.

57. *Comment:* In the North and Clark Forks, according to the TMDL document, the road system is older because much of the watersheds have not been harvested in several decades. Many of the roads were also constructed in close proximity to the streams and thus large portions of their surface eroded soils can be deposited into the waterbodies. This does not seem to be the case in the South Fork where the road system has been constructed more recently and largely along ridgetops. However, your point that road related sediment may not have reached the waterways yet is valid and should be monitored. The statistic that shows 37.9% of the identified road milage in the watershed was constructed in the last ten years (1989-1999) is startling. The road surface reduction called for in alternative one is on the lower end of the range recommended in the other pertinent sediment TMDLs. Where road related surface erosion is expressed as its own category, the percent reductions required range from 62% in the draft Navarro TMDL to 85% in the South Fork Trinity Plan. In the North Fork of the Ten Mile River, road surface erosion contributes twice the amount of soil to the waterways as landslides, according to the TMDL analysis. This tributary has not been intensively harvested in decades and given this data, I believe the roads have probably been largely unmanaged and left to deteriorate. It is possible that there has been some stabilization in the rate of sedimentation, but the roads are by far the largest impairment contributor. The larger reduction requirement would be the driving force behind repairing, upgrading and/or decommissioning these largely seasonal roads (87.7% of the road milage throughout the basin is native surface, seasonal roads). Repair must be required before they again experience the heavy traffic that will accompany anticipated harvest, especially since the Little North Fork Ten Mile River is the best of the coho streams in the watershed and the only one in the North Fork Ten Mile River.

Commentor(s): Bybee

Response: EPA agrees. See also response to Comment 51.

58. *Comment:* Another argument for the stricter allocations comes from the modeling and estimates used in deriving the sediment budget. Campbell Timberlands, Inc. did not grant the project consultant, Graham Matthews and Associates, access to their ownership (85% of the watershed) in time to calibrate the model for this drainage. Since additional data points could not be collected in this watershed to confirm or refute that relationship, the more cautious set of allocations is warranted.

Commentor(s): Bybee

Response: EPA agrees. Using a more cautious set of allocations provides a margin of safety where there is uncertainty. See also Comment 51 and response.

59. *Comment:* The skid trail allocation probably should be revisited in the near future, since these estimates were also not calibrated, and could underestimate sediment production. Since skid trails seem to be a minor contributor in comparison to anthropogenic landsliding and especially roads, use of the second alternative allocation may provide an adequate margin of safety.

Commentor(s): Bybee

Response: EPA agrees. See Comment 51 and response.

Background Levels

60. Comment: Hines (2000) shows background loads in un-logged forests that show the managed Ten Mile watershed to be at or below these levels. Commentor referred to a graph of fine sediment (< 0.85 mm) samples in the North Fork tributary trending downward since 1995, following an apparent increase from 1993-1995, and two graphs showing fine sediment (<0.80 mm) in Godwood Creek, Humboldt County and North Fork Caspar Creek, Mendocino County for 1967-1969, suggesting that those were background fine sediment levels for unlogged old growth and second growth watersheds, and that the North Fork Ten Mile samples were similar or better.

Commentor(s): Craig.

Response: EPA notes the comment, but disagrees with the implication that the Ten Mile River sediment conditions are below background levels for un-logged forests.

Harvest Allocations

61. Comment: You should consider Dr. Leslie Reid, incident to the Big River Study, (http://www.walkon.net/Reid_2.html) found that Activity Based Thresholds, were the best method to reverse cumulative watershed impacts, i.e., sediment loads. First the TMDL establishes a threshold beyond which nuisance impacts are disallowed. Next a maximum timber volume (amount) which can be removed from a watershed establishes a maximum value for the amount of timber removeable from a watershed in order to achieve the TMDL maximum. The CDF abhors valid scientific assessment of cumulative impacts. There is no methodology in the Forest Practices Rules for this whatsoever. Zip. What is missing from the TMDL methodology is a complementary requirement for the establishment of TMTV, total maximum timber volume, removable from a watershed. This would go a long way in halting the shucks used by Foresters and CDF to finesse measuring and reducing cumulative nuisance impacts from bad management practices. In our northcoast region if the EPA does not know how to set such thresholds the scientists at the Redwood Sciences lab do.

Commentor(s): Harrington

Response: EPA assumes that commentor is suggesting that the TMDL should provide for timber harvest loads. The TMDL allocates loads of sediment, which is the identified pollutant in the water body, but does not allocate "harvest loads." As stated in the document, implementation measures for the TMDL will be developed by the Regional Water Board.

61. Comment: Silviculture activity is linked to the TMDL in the report, hence by inference the current level of harvest is questioned.

Commentor(s): Craig

Response: See response to Comment 60.

Implementation Recommendations

63. Comment: This TMDL contains an implementation and monitoring recommendations section that was not included in previous TMDLs. I think this is a great idea and I understand that the Regional Water Board played a very large role in assembling this section. It should prove very helpful to the landowners in the basin as it specifically identifies some possible actions that could be taken prior to the development of the monitoring plan and implementation measures. It also seems to be very logically proposed as the known coho streams are prioritized with possible remedial actions identified. In the future, as part of the basin plan amendment process, NMFS will need to review the actual monitoring

plan and implementation measures for this technical TMDL and others to insure that they are protective of salmonids.

Commentor(s): Bybee

Response: Comment noted. EPA has added text summarizing the consultation process with NMFS.

64. *Comment:* With the listing of the Coho & Steelhead (by NMFS) as a threatened species, critical action must be taken by all landowners in this watershed to decrease activities that contribute to cumulative impacts upon water quality. It is the responsibility of the governmental agencies, resource extractors, timber industry and the general public to ensure that water quality is improved (and soon) and that species & habitat survive and are available for future generations. As things stand-- great damage has been done but still can be mitigated with prudent measures. At the regional and local level, it is necessary to create co-operative arrangements and joint actions to support effective action, strategies and remedies.

Commentor(s): Kaczorowski

Response: Comment noted. As stated in the document, implementation measures will be developed by the Regional Water Board.

65. *Comment:* An adaptive management component should be included in any implementation plan to provide for continuing improving trends.

Commentor(s): Gustavson

Response: Comment noted. EPA supports adaptive management and monitoring. Text has been added to the Implementation recommendations section to add that suggestion. Development of implementation measures are the responsibility of the Regional Water Board.

66. *Comment:* The coho salmon were recommended for listing as an endangered species over seven years ago. Political maneuvering stalled, then degraded their listing until four years ago. Since the coho were listed--as only a "threatened" species--- virtually nothing has changed in the watersheds; nor have the agencies proposed new rules to protect the coho from activities which harm them. Meanwhile, the coho continue to disappear. The precipitous decline of the coho in the Ten Mile has occurred because of inadequate review and lax enforcement of Forest Practice rules too weak to protect salmonids and the twenty other listed species in this watershed. Now it is time for the timber industry and agencies charged with overseeing it to bite the bullet, accept Friends of the Ten Mile's and EPA's recommendations and go to work to repair the damage. Therefore, it is vital that this TMDL be adopted and the State Water Quality Board begin immediate implementation.

Commentor(s): Vidaver

Response: Comment noted. Development of implementation measures are the responsibility of the Regional Water Board. EPA will provide these comments to the Regional Water Board for their consideration.

67. *Comment:* While sediment is the most obvious limiting factor for the beneficial uses of the Ten Mile River, a strong argument can be made from the data, that elevated stream temperatures in many of the sub-watersheds are also limiting coho survival. We would like to see temperature added to the list of pollutants impairing this watershed.

Commentor(s): Vidaver

Response: Comment noted. The process to determine impaired waterbodies and consider additions to the Section 303(d) list is next scheduled for 2002. EPA will provide these comments to the Regional Water Board for their consideration in the listing process.

Public Participation

68. *Comment:* The public participation process for development and review of the Ten Mile TMDL was inadequate. Notification of public meetings was not effective. We were not aware of the scheduled meetings until just prior to the meeting, which made it difficult to adequately prepare and participate. Our fishery biologist informed me of the meeting the day of the meeting. David Hines [Campbell Timberland Management] had not been notified of the meetings either. We found out because we happened to check EPA's website. In the timeframe available to us, thoughtful review of the draft was not possible and meaningful participation in the meeting was limited. Deadlines and process for making this comment were difficult to find.

Commentor(s): Gustavson

Response: EPA regrets that you were disappointed in the process. EPA provided public notice of the meetings by direct contact and by contacting newspapers and radio stations. Prior to the first meeting, EPA directly contacted several dozen individuals to inform them about the meeting. This included David Hines. Prior to the second meeting, a formal public notice was provided to individuals, newspapers, and radio stations were contacted. Those who attended the first meeting were mailed the public notice. EPA mailed a draft of the TMDL to those who requested it. EPA mailed a copy of the draft TMDL, public notice, and supporting documents (Sediment Source Analysis [GMA 2000], and Assessment of Aquatic Conditions [Mangelsdorf and Clyde 2000]) to individuals and organizations, including the commentor, prior to the second meeting. The draft TMDL and public notice, which included the deadlines and contact information, was also posted on EPA's website. Furthermore, EPA directly sought the cooperation of Campbell Timberland Management as well as that of its previous owner early in the process of TMDL development.

69. *Comment:* Friends of the Ten Mile will be actively participating in the implementation phase of this process. We look forward to working with all parties attempting to restore this once productive watershed and its thriving coho population to its previous abundance.

Commentor(s): Vidaver

Response: Comment noted.