NAVARRO RIVER
TOTAL MAXIMUM DAILY LOAD FOR
TEMPERATURE AND SEDIMENT

COMMENT RESPONSIVENESS SUMMARY

December 2000

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The comments from the public that the U.S. Environmental Protection Agency (EPA) received on the September 2000 draft TMDLs for the Navarro River are described below along with EPA's responses. Excerpts or paraphrases of the comments appear in *italics*. EPA descriptions of comments and our responses appear in normal font.

1 - Dr. Hillary Adams, Navarro Watershed Protection Association

Comment: Figures 5.5 - 5.7 of the TSD are misleading, some important information is out of date and critical issues of flow are ignored.

Response: The regression analysis for figures 5.5-5.7 are from 1995 and 1996, which is the most recent data available. The analysis illustrates the complexity of flow and temperature in the Navarro. While new vineyards (and thus diversions) have been developed since that time, we believe that the general pattern of hydrologic

complexity has not changed. The commentor is correct that some problems for Salmonids caused by reduced summer flow are not analyzed in the temperature TMDL. This is because the TMDL is specifically designed to achieve water quality standards for temperature and sediment. The TMDL is not a comprehensive recovery plan for Salmonids (such as might be prepared under the Endangered Species Act), which would be beyond the scope of the TMDL. We have revised the language in the final TMDL to clarify this. In addition, in response to comments, further analysis and discussion of flow was conducted (see TSD addendum and final TMDL.)

Comment: The TSD did not involve field checking as numerous timber harvesting plans (THPs) have been permitted since the Navarro Watershed Restoration Plan was prepared. Maps which show areas vegetated by trees are thus out of date.

Response: While the commentor is correct that mapping of recent THPs was not incorporated, the vegetation maps were used to determine the type of vegetation in an area. Regional Board anticipates that use of vegetation type and field analysis of site potential will be critical to assuring that during implementation the most current information is used. However, USEPA believes that the information used shows that improvements in riparian condition from current practices will result in increased shade, decreased temperatures and more miles of good cold water stream habitat for Salmonids.

Comment: The TSD relies on data that is more than three years old. Thousands of acres have been converted to vineyards since then (a videotape illustrating this was attached.) Information on the use of water by vineyards was provided.

Response: Regional Board staff have increased their estimates of vineyard acreage reported in the TSD. Information from the videotape was used in developing the revised acreage. The source analysis and load allocations were also revised in the final TMDL, in part to reflect the updated vineyard erosion estimates.

Comment: Several comments and data on water use of vineyards are made.

Response: This information does not require a change in the TMDL.

Comment: The TSD omits the role of flow velocity and depth. The TSD gives these lower priority.

Response: We revised the language in the final TMDL to clarify that the SSTEMP analysis in the TSD looked at the relative importance of a number of factors including flow rate and stream width. Additional analysis of flow was undertaken in response to comments. Again, while we acknowledge that flow can have impacts to Salmonids unrelated to temperature, addressing those impacts is beyond the scope of the TMDL.

Comment: No matter how much shade is provided, if there is not enough water in the system, the fish will die.

Response: We agree with the commentor, however, not all flow effects are temperature effects. In addition, reduced surface flows will affect fish in many ways other than temperature - lack of access to refugia, food production, estuarine conditions and connectivity between consistently good rearing habitat. This TMDL is limited to issues of temperature and sediment and does not cover all issues of flow and Salmonids.

Comment: Coho and steelhead use the entire watershed and cannot reach many areas because of onstream reservoirs. Onstream reservoirs, from vineyards, are affecting the upper watershed. The North Fork is under heavy timber harvesting.

Response: We agree with the commentor that issues regarding how fish move through the system, particularly the connectivity between suitable habitat which changes with conditions both natural and manmade, is important. This TMDL is limited to issues of temperature and sediment and does not cover all issues of flow and Salmonids.

Comment: Adult coho have been seen in Anderson Creek and there is hope of restoration.

Response: We agree with the comment.

Comment: Drastic reductions in flow are affecting fish (data was attached.) *For four to six months the Navarro is in a state of nearly permanent drought.*

Response: In response to public comments, additional analysis of flow was undertaken and is reflected in the final TMDL. We reiterate that even though the current data show that flow is affecting temperature under certain - but not all - circumstances, the TMDL has not analyzed the impacts of flow on fish beyond temperature. The water rights and Endangered Species Act (ESA) process are the appropriate forum for these concerns.

Comment: Data from water rights investigation is inadequate and outdated and does not meet CEQA requirements. The information does not include unpermitted diversions, riparian or pre-1914 rights. Data supporting this was provided. *In addition, reservoirs and wells are a particular problem. The known 130 illegal reservoirs are being permitted. Cumulative effects of reservoirs, tailing ponds, increased use of riparian water etc. have been ignored by the TMDL.*

Response: USEPA, the Regional Board and the SB Division of Water Rights reviewed the existing information on stream diversions for the revised temperature modeling in response to comments. The data used in the revised modeling is the most current quantitative data available. We agree it does not include all diversions, particularly illegal and riparian. However, it was the best available information, even after additional searching.

Water rights determinations and CEQA requirements are the responsibility of the State of California, and are beyond the scope of this TMDL. The TMDL addresses the issues of temperature and sediment. EPA realizes that flow can affect Salmonids in other ways, and the final TMDL refers to the processes that could address these issues that are outside the scope of the TMDL.

Comment: Historic records of the USGS gauge show the cumulative effect of increased diversions. Pumping dry of smaller creeks will not be shown by the gauge. More water quantity information needs to be collected.

Response: When revising the draft TMDL, USEPA considered additional information on diversions and additional modeling conducted by the Regional Board to assess the effect of diversions on stream temperatures. In the final TMDL, we conclude, as did the commentor, that additional information needs to be collected.

Comment: Salmonids need clean, cold water, they need an adequate food supply and enough depth and velocity of water to make their winter spawning runs. Their entire life cycle must be considered.

Response: The TMDL's analysis and conclusions are limited to temperature and sedimentation. We agree that the entire life cycle of Salmonids is important, but some issues related to flow are beyond the scope of the TMDL.

Comment: The 5% of land dedicated to agriculture is doing enormous harm. Mendocino County does not have an effective grading ordinance, so there is vastly increased sedimentation of the watershed. New vineyards are a problem and the TMDL must develop adequate monitoring and enforcement requirements.

Response: This TMDL does not include an implementation plan. Implementation issues will be addressed subsequently by the Regional Board.

Comment: Coho and steelhead are listed as threatened, but this does not adequately take into account the individual rivers and streams (e.g. the Navarro.) The TMDL does not take enough effort to restore the Navarro.

Response: Concerns about the categories for listing under the Endangered Species Act are beyond the scope of the TMDL. Likewise, the TMDL does not address all of the factors potentially limiting salmon populations. The TMDL addresses the pollutants (in this case temperature and sediment) listed in accordance with Section 303(d) of the Clean Water Act by the State as impairing the water quality of the Navarro River.

Comment: Statements made at public meetings that suggest that reduced flow would reduce water temperatures conflict with statements made by Cannata at CDFG. In addition, this reduced flow ignores the importance of the estuary.

Response: The TMDL has been revised to reflect the complexities of the relationship between flow and temperature, including those expressed by the commentor. USEPA does not support decreasing stream flow.

Comment: Flow has been found to be important to temperature and salmon in many forums such as the Klamath River and the Central Valley Project Improvement Act.

Response: The factors affecting temperature are multiple and are not the same in all watersheds, at all times, or in all years. The TMDL has been revised to emphasize the complexities of temperature, especially as found in the modeling for the Navarro.

Comment: Monitoring and enforcement of TMDL terms is also critical. Our experience has been that staff is underfunded and top officials are not responsive.

Response: EPA agrees that proper implementation is important. The next phase of the TMDL process is development of implementation measures by the Regional Board.

Comment: Voluntary efforts will not work here. Clear cuts and illegal activities by vineyards are a historic problem in the Navarro.

Response: USEPA will convey all of the public comments received on the draft TMDL to the Regional Board for their consideration during the development of implementation measures.

Comment: The fate of species is linked to our own fate.

Response: EPA appreciates the concern of the commentor.

2 - Kathy Bailey

Comment: Inadequate attention has been given to the interaction between flow and temperature. Commentor provides examples in the Navarro.

Response: EPA agrees that the interaction between flow and temperature is complex. The TMDL has been revised to include more analysis and text on the interaction between flow and temperature.

Comment: The TMDL assumes information on site potential. The current Board of Forestry rules do not require site potential, they require only 25% conifers.

Response: The TMDL establishes load allocations for effective shade. Shade is composed of shading by topography and stream geometry, as well as riparian condition. In some locations (e.g., a narrow, deep canyon), stream characteristics could shade the entire stream without site potential trees. It is up to the Regional Board to consider the various factors which affect shade and develop implementation

measures that, among other things, will result in attainment of the effective shade allocations.

Comment: The vineyard explosion has been recent and they don't plant on the contour.

Response: In response to public comments, the vineyard acreage has been updated. The revised analysis is contained in the TSD addendum. Attaining the revised load allocation will require an 80% reduction from current erosion estimates. The allocation is based, in part, on Regional Board observations that many vineyards are not using conservation practices.

Comment: Using Noyo baseline seems peculiar because Navarro has more agricultural land.

Response: Information for the Noyo River was used to establish the loading capacity for the Navarro River, because information on sediment delivery at a time when fish populations were relatively high is available for the Noyo. Because of the differences between the two watersheds, we did not use actual delivery amounts from the Noyo in setting the TMDL; rather, we used data from the Noyo to calculate how much increase over natural loading rates could occur without causing adverse impacts to Salmonids. We were not able to use a reference period from the Navarro to calculate the Navarro's loading capacity because historical data was not available.

3 - James Bybee, National Marine Fisheries Service

Comment: Commentor describes the Endangered Species Act in regard to the Navarro.

Response: Comment noted. USEPA has initiated informal consultation with the Services.

Comment: The main concern is that the SSTEMP model examines only one reach of the stream system. This reach is not representative. It is a gaining reach. The geology of the Navarro is essentially nonwater-bearing. Commentor refers to comments by Dennis Jackson and Friends of the Navarro.

Response: In response to comments, additional analysis of flow was conducted including losing and neutral reaches. This additional analysis is described in the TSD addendum and is summarized in the final TMDL.

Comment: We agree that increased shade is necessary, but it will not be sufficient for large portions of the Anderson Creek Basin and mainstem Navarro. The Entrix report shows these areas to be important to threatened species.

Response: USEPA agrees that shade is not expected to reduce temperatures in parts of Anderson Creek and the mainstem Navarro to levels (<17EC MWAT) that are suitable for threatened species. In part, this is because potential shade is limited by the geometry of the channel in certain reaches, for example where the stream has a naturally wide channel. The SSTEMP modeling represents a reach in a simplified form and does not take into account the complexities observed in actual rivers, including meanders, pool and riffle sequences, overhanging vegetation and localized discharges from cold springs.

Also, we note that our modeling for the South Fork Eel's Bull Creek, an area without diversions, showed a similar pattern with tributaries having ambient MWAT temperatures that were suitable after increased shade, but Bull Creek itself was predicted to be only partially suitable. Although summer flow needs to be adequate to provide connectivity between refugia during stressful periods, sediment reduction and the resulting pool formation appear to be important in these areas. The TMDL establishes allocations for inputs of temperature (as characterized by shade) and sediment, which will improve temperature conditions and increase the availability of pools. Flow allocations, on the other hand, should be considered in the State water rights process.

Comment: Three cfs was used as input to the model, we believe 2.7 is more correct.

Response: The minimum flows used in the modeling have been revised to reflect the lowest flows recorded at the USGS gauge.

Comment: What rationale was used to draw a difference between importance of shade and flow?

Response: Additional analysis of the importance of flow was conducted in response to comments. The analysis is described in the TSD addendum and summarized in the final TMDL. The factors that we used to determine the relative importance of shade and flow include: (1) the magnitude of the improvement in stream temperature that could result from improvements in shade or flow; and (2) the number of streams where shade or flow would have a significant impact on temperature. We found that shade can have a large effect on stream temperature, the effect is always positive, and that shade is an important factor throughout the basin. We found that the relationship between flow and temperature is more complex, but that the magnitude of the effect of flow on temperature was never as great as was commonly the case with shade.

Comment: The commentor makes several comments regarding the modeled width of the buffer zone. *NMFS must consider all aspects of a buffer zone.* The Short Term Habitat Conservation Plan Guidelines were provided and described.

Response: The TMDL calculates the loading capacity and load allocations for temperature and sediment. An assumed buffer width was used in the temperature

model, but the TMDL does not establish any requirements related to a buffer zone. The issue of buffer width could be considered by the Regional Board when it prepares implementation measures for the TMDL.

Comment: We suggest that the model be rerun on different segments of the river system. Minimum flow guidelines were attached and described.

Response: In response to comments, additional modeling was conducted on different segments of the river. This is described in the TSD addendum and summarized in the TMDL.

Comment: Additional indicators for the sediment TMDL were recommended - aquatic insect production, large woody debris, backwater pools, geologic assessment for unstable areas, and road location. *Other North Coast TMDLs used these indicators.*

Response: Although there are a myriad of indicators for fine sediment in streams and fish habitat qualities, there is no one indicator - or set of indicators - that is agreed upon by the scientific or regulatory community as the best set of indicators. Therefore, USEPA has been using a variety of instream indicators that vary watershed by watershed given the particular circumstances of each watershed, and taking into account dialogue with scientists and the public who work on each specific watershed. Also, some of the indicators recommended by NMFS do not have established protocols. However, we have added the indicators requested to the final TMDL based on input from NMFS that these indicators are important to protect threatened Salmonids. We encourage the Regional Board to work with NMFS and others to define monitoring protocols and establish priorities, during the preparation of the monitoring and implementation measures. In addition, we intend to discuss with NMFS, the Regional Board, and other interested parties in the near future whether it would be more appropriate to have a uniform set of indicators for all North Coast watersheds.

Comment: The method for assigning the allocations follows the pattern of the Noyo TMDL. However the natural sediment yield in the Navarro is 1170 t/mi^2/year versus 370 t/mi^2/year in the Noyo. Noyo mass wasting is also lower. Why is the natural loading here so much greater?

Response: The Navarro and Noyo are comprised of a different mix of geologies. The Navarro has more central Belt Melange, as well as unstable coastal belt sedimentary units. However, for areas of the Navarro that have similar geology as the Noyo, the numbers are more comparable (373 t/mi^2/year for the Noyo and 520 t/mi^2/year for the North Fork Navarro).

Comment: Why were only one set of photographs used in the Navarro analysis and not an entire historical set as was done for the Noyo.

Response: Aerial photos were used for different purposes in the Noyo and Navarro studies. In the Noyo, the aerial photo analysis was used to develop the sediment budget. In the Navarro, the aerial photo analysis was used to estimate the ratio of management to natural mass wasting, identify the extent of the road network and identify the rate of new road construction.

Comment: The estimated amount of erosion from roads and the load allocations are much greater than those for similar watersheds. This amounts to a doubling or tripling of allocations from the Garcia and Noyo.

Response: The differences between the Navarro and other TMDLs are due to a number of site-specific factors, including geology, to different analytical methodologies, and to different allocation methodologies. Significantly more effort was put into mapping all roads from aerial photos during development of the Navarro TMDL. Thus, the estimates for the Navarro have less uncertainty. In the Garcia and Noyo, the larger uncertainty resulted in a lower allocation for roads - which can be interpreted as requiring stricter erosion controls from roads in these watersheds. This is consistent with the intent of the Clean Water Act that the greater the uncertainty the greater the margin of safety. During implementation we expect that site specific data will be used to determine whether or not erosion is natural, human-caused and/or controllable. Also, the allocations in the final TMDL have been revised. In the draft, the allocations were based on the same percentage reduction from the estimated current loadings for all source categories. In the final, the allocations consider the relative ease of controlling the various source categories. This has resulted in the allocation for roads being more similar to allocations for roads in the Noyo and Garcia TMDLs.

Comment: Please defend your assumptions on extrapolating road types from Hagans and using Garcia for depths of landslides and road fill. Also discuss why the assumption that all bank erosion is natural leads to a conservative analysis.

Response: Our approach is consistent with methodologies developed for rapid sediment budgets. Reed and Dunne, 1996 state “Empirical results from sediment budgeting studies may be transferred to other watersheds with similar climate, geology, soils and land use.” The data on roads is assumed to reflect the typical conditions of rural non-industrial dirt roads in the Navarro. The assumption is reasonable given that the majority of dirt roads observed by Regional Board staff have been built with similar design (i.e. cut-and-fill construction, insloped road surface, inboard ditch, outside berm, undersized stream crossing and inadequate drainage of runoff.) Also the roads PWA surveyed are in the Navarro, so it is reasonable to assume they have been subjected to the same climatic conditions. Bank erosion is a relatively small source of sediment, and the natural contribution from some of the other sources is likely underestimated.

Comment: We will need to review monitoring and implementation plans for the TMDLs.

Response: USEPA will work closely with NMFS on TMDLs and we expect the Regional Board will work closely with NMFS on implementation and monitoring measures.

4- Bob Burger

Comment: I am concerned about the speed at which this is being carried out. All the data used was collected for current conditions when fish populations are already in decline. The commentor describes conditions on Rancheria Creek from 1954 to the present. *There is no analysis of fish populations versus habitat conditions. There is no data on historical water temperatures, gravel composition or actual shading conditions. Therefore the targets may not be attainable.*

Response: EPA is establishing the TMDL in accordance with the schedule contained in the consent decree.

EPA agrees with the commentor that historical information that ties fish populations with habitat conditions would be extremely useful analytically. However, this type of information was not available for the Navarro, nor is it usually available in other watersheds. Thus, EPA uses a variety of methods to determine desired conditions, including studies of fish preferences (e.g. gravel, water temperatures) and modeling (shade). EPA also used information from the Noyo River to estimate the extent to which sediment delivery to the Navarro River could be elevated above natural levels and not impair salmon populations.

While there are no known historical measurements of shade, we believe that a reasonable approximation was to use GIS information on current vegetation and literature values on vegetation potential. Regional Board staff review of aerial photographs from the 1930s indicates closed canopies over many streams in the watershed at a time when coho were much more abundant.

Comment: The natural receiving water temperatures are not known (stated at public meeting.)

Response: While monitored historical water temperature data is unknown, as the commentor notes, USEPA used modeling to tie improved vegetation to improved shade to improved stream temperatures.

Comment: Historical data on stream flows during critical temperature periods is lacking. High water temperatures do not coincide with lowest flows. Shading should not be given a disproportionate contribution. Flow data is collected at different points than temperature. Commentor's experience is that flow has been reduced since the 1950s and 60s, due to increased diversions and aggradation.

Response: The Regional Board used historical flow data in analyzing the Navarro. In response to comments that the analysis minimized the effect of flow, Regional Board conducted more analysis to assess the effect of flow under a wider range of conditions. This analysis is described in the TSD addendum and summarized in the final TMDL. The commentor correctly states that the highest water temperatures do not occur during the lowest flows, which only serves to highlight the complexity of the issue. In addition, we emphasize that at all locations where flow data has been collected, temperature data has also been collected.

Comment: Commentor disagrees with the decision to include the affects of aggradation into natural sources of erosion. Commentor would like to make sure to include manageable portions of stream side erosion in the implementation phase, given that it is a large erosion source.

Response: EPA agrees with the commentor that some portion of stream aggradation is the result of historic, and possibly present, upstream and localized erosion. However, for TMDL analysis and implementation, it is most important to address the problems (i.e. elevated sediment inputs from upland sources) rather than the symptoms (decreased channel stability due to increased sediment load.)

Comment: The commentor notes that the support of landowners is needed for success. He also comments that landowners will be enthusiastic if the problems are realistically identified and the solutions are implemented with common sense.

Response: The comment pertains to implementation. EPA is providing all public comments to the Regional Board for their consideration during the development of implementation measures.

5 - David Butler

Comment: Commentor has observed that some areas of a stream are improving, where logging hasn't occurred recently, but stream gravels are getting worse in areas where logging occurs upstream. *The TSD should track activities at a smaller scale and allow provisions for landowners where improvements have been made.*

Response: The "loading capacity" of the TMDL uses a percent over natural as the goal for the watershed. One of the reasons this approach was taken is that it explicitly would make it easier for good stewards of their land to be in a better position during implementation. The Regional Board will be able to consider these issues of equity and incentives when developing implementation measures for the TMDL.

Comment: The commentor makes several comments regarding the tree height figures and their accuracy due to local soil conditions, micro environments and importance to shade considering channel width.

Response: The allocations in the TMDL related to temperature are for shade, which is affected by stream channel width, topography and riparian vegetation conditions. EPA agrees with the commentor that the factors identified by the commentor can affect tree height, and that narrower channels could be shaded by vegetation that is less than site potential in height. The TMDL has been revised to emphasize how site specific conditions can be taken into account by the Regional Board when developing implementation measures for the TMDL.

Comment: Mature trees that are starting to die should be allowed to be harvested. This will also assure better shade.

Response: The comment pertains to implementation. All public comments will be provided to the Regional Board for their consideration during development of implementation measures.

Comment: The tree height assumptions are not realistic for the Navarro, which has worse conditions than those assumed.

Response: The vegetation data used in the analysis was developed from satellite imagery from the early 1990s and is available from the California Department of Forestry and Fire Protection. On the other hand, the shade allocations in the TMDL were specifically designed to be compatible with field measurements collected during implementation. The Regional Board will be developing implementation measures.

Comment: A reasonable goal would be a riparian tree height based on a micro area basis.

Response: The TMDL uses shade, not riparian tree height, as the important factor for fish. Shade takes into account channel width and topography, in addition to riparian vegetation. Other site specific factors, such as an assessment of site potential vegetation, can be considered by the Regional Board in developing implementation measures.

Comment: The data used on shade and canopy conditions does not match with on the ground observations for the Dago Creek area. Only the most easily accessible and least important areas of the watershed were analyzed in depth. I invite you to come out and verify your information.

Response: The GIS data may not account well for site specific channel topography, although we believe it does well on vegetation type. The draft TMDL recognized this drawback and set site specific shade allocations based on site specific conditions, not model assumptions. The TMDL has been revised to emphasize this approach which the Regional Board can incorporate into the implementation plan. In addition, USEPA appreciates the invitation to gather site specific data.

Comments: The commentor makes several arguments regarding the interaction between sediment and temperature, including laminar flow and pool stratification, transport of sediment and scouring, widening of channels, fines and opaque water and solar heating and dissolved oxygen. The commentor states that the issues of sediment and temperature must be analyzed together.

Response: EPA agrees that unnatural increases in sediment can have harmful effects on stream temperatures given certain conditions such as stream gradient etc. The TMDL recognized their interaction explicitly by using stream width as a factor influencing shade and thus stream temperature. While we did not model the beneficial effects on stream temperatures from sediment reduction (stream narrowing, pool formation) we consider this the major factor in the margin of safety. Thus, the actual beneficial effects of sediment reduction and increased shade together will be more than what would be achieved separately.

Comment: Page 20 of the TSD states that 2% of the total yearly flow is diverted in the summer. This calculation is more important when looked at as 40% of the summer low flow. The Navarro TMDL should reduce water diversions during the critical summer low flow periods.

Response: In response to comments, more analysis of summer low flow conditions was conducted. The results are discussed in the TSD addendum and summarized in the final TMDL. As a point of clarification, the TSD only used summer low flow conditions in analyzing the effects of flow on temperature.

Comment: The commentor makes several observations about the impact of vineyards and miscalculation of units in the analysis.

Response: Regional Board staff reviewed the calculations in light of the comment, but concluded that the calculations in Appendix C are correct. In addition, Regional Board staff revised the acreage of vineyards in response to comments. This is reflected in the final TMDL.

Comment: Vineyard roads need to be taken into account. The commentor states that vineyard roads should be surfaced and meet the same standards as other residential roads.

Response: Roads, for all purposes, have been analyzed in the Navarro TMDL. EPA is providing implementation concerns to the Regional Board for their consideration during development of implementation measures.

Comment: It is in the best interest to prevent further vineyard erosion.

Response: EPA is providing implementation comments to the Regional Board.

Comment: The commentor calculates that vineyards produce 10% of overall sediment if roads are included. *For 2% of land use to cause 10% of sediment is a problem that must be fixed.*

Response: While the State has not yet developed implementation measures for the Navarro, the sediment TMDL envisions that reduced erosion from vineyards is necessary to meet water quality standards. However, the approach taken is to reduce all sources of unnatural sediment and not just target one source.

Comment: Reduction of sediment yield on the Anderson and mainstem from 110-120 tons/mi^2 to 15 tons/mi^2 is unlikely. Vineyards deliver 6400 tons/mi^2 and result in more sediment than other sources combined.

Response: Regional Board staff calculations estimate that the current loading from vineyards is not 6400 t/mi^2, but approximately 3200 tons/mi^2. The 110-120 tons/mi^2 is an average of the subwatershed which includes vineyards and other land uses.

Comment: Commentor proposes a TMDL limit from vineyards at the current percent as of today. *This would limit new development and not hurt current vineyards.*

Response: USEPA is establishing load allocations for sediment that envision reductions in all human caused sediment sources identified in the TSD. We believe this is more equitable than only targeting reductions from vineyards. How to obtain the necessary reductions in sediment from vineyards will be determined by the Regional Board when it develops implementation measures for the TMDL.

Comment: The TSD mixes units and is confusing on Tables 5-3 through 5-8. In addition, acres and miles in the discussion on vineyards masks their impact.

Response: Regional Board staff estimates show approximately 3200 tons would be delivered from a square mile of vineyard, but the values are averaged over the entire subwatershed. This puts the vineyards into context in relation to other more dispersed activities.

Comment: The TSD mixes units, sometimes using acres, sometimes square miles, inches, meters etc.

Response: While we have not revised the TSD, we have provided information in the TMDL consistently in tons/mi^2 /year.

Comment: Tables 5-5 to 5-8 draw lines, that purport to be average flow, are statistically invalid.

Response: We have reviewed figures 5-5 to 5-8 and conclude they are correct.

Comment: *The TSD uses information gathered by PWA partially on the owners property.* The commentor states that they were refused access to the data and thereby do not support its use.

Response: The PWA study is public information and the commentor can be provided a copy.

Comment: The temperature graphs in Appendix A use varied values and make it difficult to compare.

Response: Temperatures were gathered in the field for varying lengths of time, depending upon the location and the year. In addition, temperature ranges vary widely from location to location. Using one scale would have resulted in difficult to read graphs, therefore, Regional Board staff decided that this was the most practical way of presenting the information.

Comment: CDF requires that NTMPs address sediment and temperature problems. This expensive document should not be duplicated by another State program. The commentor proposes that NTMPs take precedence over TMDLs until a TMDL implementation plan is developed and that future NTMP and TMDLs not be duplicative and costly.

Response: The comment pertains to implementation. EPA is providing all public comments to the Regional Board for their consideration during development of implementation measures. USEPA is also participating in a discussion group that looks at possible streamlining of paper requirements for high performing landowners.

6- Beverly and Marvin Dutra

Comment: The commentors were not given notification of the meeting or document despite having signed a previous list.

Response: We apologize if the commentors were not added to the mailing list as requested. However, notice of the meeting was provided in the Anderson Valley Advertiser, Mendocino Beacon, and Santa Rosa Press Democrat.

Comment: The commentors make several comments alleging flaws in the analysis. *Aerial photos do not reflect recent vineyard growth, apple production and ranching are excluded.*

Response: In response to comments, Regional Board staff revised the vineyard estimates (see TSD addendum) and the revised estimates were used to recalculate the load allocation for vineyards. Separate estimates were not made of apple production and ranching but these are covered in road sediment and the riparian effects in the shade requirements.

Comment: The analysis does not analyze the result of harvesting of all lands designated TPZ. The commentors are hesitant to accept that "roads" are a major source of sediment.

Response: Calculation of sediment delivery is a function of both the inherent erosion rates, the frequency of the erosion events and the geographic extent of the erosion process. All these factors were taken into account in the sediment source analysis - as they occurred in the time period analyzed. EPA does not think it is correct to calculate sediment delivery as if it takes place all the time and everywhere - if it actually does not. The commentor is correct however that if the extent and frequency of harvest were changed the relative proportion of sediment delivery will also change. Please note that timber roads were included in the analysis, so the percentage from roads includes roads from industrial timber.

Comment: Provide justification that roads undrivable in 1984 are not contributing significant sediment. The commentors provide information and observation asserting that Indian Creek that has heavy sediment and not much recent road use.

Response: This assumption that roads undrivable in 1984 are not contributing significant sediment was based on Regional Board staff observations that on these roads many stream crossings had already failed, unstable fills had already caused debris slides and the gullies originated from these roads appeared to have stabilized. In addition, Indian Creek does in fact have significant road development. The road density is 4.3 miles/square mile, with a total road length of 166.2 miles. 14.2 miles of road were constructed in the Indian Creek watershed during the 1984-96 time period.

Comment: Appendix C should be corrected given vineyard erosion. The commentors provide information on recent aerial photographs.

Response: In response to comments, Regional Board staff revised estimates of vineyard erosion (see TSD addendum.)

Comment: The commentors are disappointed in lack of responsiveness in modeling and disagree that the model is useful because it cannot be downloaded.

Response: In response to comments additional modeling has been conducted as discussed in the TSD addendum and summarized in the final TMDL. The SSTEMP model was chosen because it is widely used and known. We received technical comments that used the model because it was publically available.

Comment: The commentors describe how low flow and sediment have caused aggradation in Indian Creek*. Low flow must be considered a factor. High gravel reduces stream cooling.*

Response: Most sediment is transported by streams during high flow periods. Thus, reductions in flow during low flow periods are not likely to significantly increase stream aggradation. We agree that excess gravel, which fills pools and increases stream width, reduces cool water habitat.

Comment: Will staff make recommendations for selected gravel removal? What is suggested?

Response: The comment pertains to implementation. All public comments are being given to the Regional Board for their consideration during preparation of implementation measures for the TMDL.

Comment: We do not need hypothetical estimates of shade.

Response: Some shade measurements were collected in the field. The measured values were extremely close to predicted values. Thus Regional Board staff had confidence in using modeling versus field measurements for the entire watershed. However, the effective shade allocations were designed to be compatible with field data collected during implementation.

Comment: The solar model must be applied to more representative reaches.

Response: In response to comments, the Regional Board ran the model on a variety of stream conditions that could exist in the Navarro. Their analysis is described in the TSD addendum and summarized in the final TMDL. We were not able to run the model for many locations using actual field data, due to the lack of information.

Comment: We do not understand why water appropriations have been disregarded. Provide an alternative model.

Response: In response to comments, the Regional Board reran SSTEMP with a variety of flow conditions and flow data. The SSTEMP model is widely used and known. Issues of water appropriations are beyond the scope of this TMDL. The commentor is referred to the State Water Resources Control Board for information on the State's water rights process.

Comment: The public was clear and adamant in the June public meeting. There has been a misguided or arrogant disregard to public input. We are hoping the draft document will be corrected.

Response: In response to public comment, the draft document has been revised and new analysis on flow was conducted.

Comment: We wish to protest vigorously that you held a private meeting for the Farm Bureau.

Response: Regional Board staff met with representatives of a number of stakeholder forums, in response to requests from these groups. All these meetings were open to the general public as well.

Comment: The commentors make several criticisms about the October 3 public meeting, such as the Farm Bureau people took up too much time; questions were not able to be asked.

Response: EPA was not always aware of the affiliations of the people that spoke. Every attempt was made to get questions from those who had not spoken yet.

7 - Stephen Hall

Comment: I cannot believe that shade is the only important factor. Several comments were made regarding flow, modeling and common sense.

Response: In response to comments, the TMDL has been revised to include more analysis and discussion on flow. We emphasize that the common sense view that increased flow leads to decreased temperatures is complicated when flow is composed of both groundwater and surface flow which have different temperatures.

8 - Eugenia Herr

Comment: Adequate importance has not been placed on flow. Flow figures are from 1995. Increased diversion of water has taken place in the last 5 years.

Response: The TMDL has been revised to include more analysis and discussion on flow. USEPA, the Regional Board and the State Water Resources Control Board Division of Water Rights met to review the data used on existing permitted diversions. Our data includes the most recent data on permitted diversions; no information was available on pre 1914, riparian and illegal diversions.

Comment: The Regional Board's reluctance to address flow is well known. I had hoped your agency would at least deal fairly with the issue. If stream flow continues to be reduced, it won't matter if the river is in deepest shade.

Response: The purpose of the TMDL is to determine the loading capacity of the two pollutants for which the Navarro River is listed–sediment and TMDL. The TMDL has been revised to include more analysis and discussion on flow. While we have analyzed the effects of flow on temperature, we recognize that flow can have negative effects on streams and fish regardless of flow's effect on temperature. The commentor's attention is directed to the State water rights process regarding flow issues.

Comment: The commentor discusses her experience on road maintenance and sediment problems. *The Hagan standards are not pertinent to the level of usage for*

residential roads. The commentor describes how vineyard winetasting has high road use and produces problems.

Response: The comment pertains to implementation. All public comments are being given to the Regional Board for their consideration during preparation of implementation measures for the TMDL.

Comment: Efforts of a myriad of agencies have had pitiful results. Isn't it time to evaluate the adverse effects of delayed and contradictory remediation? Can't we have an analysis of how and where we've failed to get results in the last five years?

Response: USEPA agrees that implementation and improved practices should not be delayed. To address the question of contradictory remediation, USEPA, the Regional Board, the SWRCB Division of Water Rights and NMFS are more actively discussing the myriad of laws, regulations and implementation activities in the Navarro.

9 - Karen Hauck, Alan Austin

Comment: U.S. EPA has no authority under the Clean Water Act to impose TMDLs on non-point sources of pollution and the EPA has no authority to require implementation.

Response: EPA's authority to establish TMDLs for waters impaired by nonpoint sources of pollution was recently upheld by the federal District Court for the Northern District of California in *Pronsolino v. Marcus* (91 F. Supp.2d at 1338; March 30, 2000).

10 - Dennis Jackson

Comment: I am very concerned that the proposed temperature TMDL does not include flow when setting the loading capacity and TMDL. EPA's guidance states "The loading capacity represents that total loading of a pollutant that a water body can assimilate while meeting water quality objectives and protecting beneficial uses." Flow is the loading capacity for thermal pollution. Shade is only a partial solution.

Response: The purpose of the temperature TMDL is to establish the loading capacity for heat inputs which is necessary to meet water quality standards. While we recognize that flow can influence water temperature, flow itself is not a pollutant, and we are not allocating flow in this TMDL. Instead, we have added a target related to flow and temperature as a condition of a well functioning watershed. Regarding specific flow allocation issues, the commentor's attention is directed to the SWRCB's Division of Water Rights work with the NMFS.

Comment: Increasing shade will take years of growth, whereas devising a plan to reduce summer diversions has the potential to provide quicker relief.

Response: The State of California has the responsibility to allocate water between users.

Comment: Data and analysis was provided in support of the conclusion that the annual minimum flow has declined over time. Regression analysis show that the year accounts for 32.7% of the variation since 1950. There should be no connection between the year and the minimum discharge. Analysis of precipitation in the Noyo and Navarro was included.

Response: The information presented by the commentor indicates that flow has declined in the Navarro. We used information on the amount of permitted diversions to model the effects of reduced flow on water temperatures. The results of the modeling lead us to the conclusion that site specific information is needed and thus flow is a major source of uncertainty in the TMDL.

Comment: Most summer diversions occur along Anderson Creek and the mainstem Navarro. The potential temperature diagrams in the TMDL show that these streams have the least potential for improvement due only to shade. Therefore by decreasing the summer diversions granted under appropriative water rights, the EPA will be able to reduce the temperature of those streams with the least potential for improvement from shade only.

Response: We agree that diversions are located in the areas with the least potential for improvement from shade. We used information on the amount of permitted diversions to model the effects of reduced flow on water temperatures. The results of the modeling lead us to the conclusion that site specific information is needed and thus flow is a major source of uncertainty in the TMDL. Please see also the response to the comment from NMFS regarding Anderson Creek and the mainstem Navarro. In addition, appropriative water rights are the responsibility of the State.

Comment: Data was provided on the input and sensitivity variables for the SSTEMP modeling. *The inflow temperature is the most sensitive variable. The SSTEMP model does not account for any interactions between the variables of the model. Analysis of the Hendy Woods and Mill Creek stations was provided that demonstrates that the inflow temperature is the dominate variable in determining what the outflow temperature is. The very strong effect of the combination of inflow temperature on the water temperature at the end of the reach raises an important question - What would be the water temperature at Hendy Woods if there were no summer diversions? The TSD must investigate this effect.*

Response: In response to comments additional modeling was conducting including adding back in the permitted diversions. The analysis is described in the TSD addendum and summarized in the final TMDL. However, two technical arguments made in the comment letter should be viewed with caution. First, the sensitivity analysis that changed variables by 10% was not used because these parameters may

not reflect the actual conditions in the Navarro. Second is the relationship of inflow and outflow temperature correlation. While they may be closely correlated, instead of cause and effect inflow and outflow could be responding to other factors, such as air temperature. The SSTEMP model is designed to separate and quantify the effects of different variables.

Comment: Information on gaining, losing and neutral streams was presented in the Navarro watershed. *It is not unusual for streams to change from losing to gaining during the year and between years. Analysis of neutral or losing reaches should be included. More flow in the neutral or losing reach will be able to resist a change in temperature. It is not known how many miles of the Navarro are losing versus gaining.* The commentor recommends extrapolation of half losing and half gaining. *The analysis did not consider the stream conditions in 1950, prior to the first summertime appropriations.*

Response: In response to comments additional modeling was conducted including an analysis of losing and neutral reaches. The modeling showed that the commentor is correct - these reaches resist changes in temperature. Additional modeling was conducted to look at the temperature effects of reducing summer permitted diversion. We do not agree that extrapolating as suggested is useful.

Comment: One of the possible cumulative effects of diversions would be to decrease the amount of summertime ground water discharge. The sensitivity analysis did not account for this effect.

Response: While additional modeling was conducted, information on how much groundwater has been effected by diversions was not available.

Comment: The commentor reports data on observed summer diversions, especially the magnitude of recorded pumping events that have reduced the flow of the river substantially and occasionally *"stopped the flow in the creek for short periods of time." These events were during wet years, during dry years effects would be worse.*

Response: The purpose of the temperature TMDL is to determine the loading capacity for heat inputs into the Navarro. Analyzing all the effects of flow on fish habitat is beyond the scope of this TMDL. While it is clear that fish cannot survive without flow, the effects of flow on temperature are uncertain. USEPA notes that the water rights and ESA process are a better forum for these types of concerns.

11 - Andrew Marks

Comment: In the context of support for restoration of streams and fisheries, there appears to be a disconnect in the various agencies. The various departments are attempting to arrive at acceptable methodologies, but do not appear to be sharing their data nor organizing into a single position. (The commentor provides several examples of lack of agency coordination.) *We do not see how restoration can be*

accomplished without multiple components being woven into a comprehensive agenda. We suggest that USEPA uses its influence to get (the State) to sit down together,

Response: USEPA understands that the State agencies shared substantial background data while developing the TSD. In response to comments, USEPA has contacted CDFG, SWRCB and NMFS in regard to the final TMDL analysis. In addition, USEPA, the Regional Board and the SWRCB Division of Water Rights reviewed the data on existing diversions used in the revised analysis to assure it was the best available information.

12 - Daniel Myers, Friends of the Navarro Watershed

Oct 15 Letter

Comment: The commentor provides quotes on TMDLs and temperature and objects to not analyzing flow. *Flow is treated as a constant.*

Response: In response to comments, additional modeling was conducted to investigate the effects of reduced flow on temperature. The analysis is described in the TSD addendum and summarized in the final TMDL. To clarify, the initial SSTEMP modeling did not treat flow as a constant but looked at the historic range of low flows recorded at the USGS gage.

Comment: EPA's guidance on critical conditions and seasonal variations necessitate that flow be analyzed. The draft TMDL uses the second wettest year on record. There is no indication of how the impairment might be corrected by restoring historical flows. Information was provided on the increase in appropriations by decade. *The TMDL speaks only to a selected 2 mile reach during the second wettest year on record.*

Response: To account for seasonal variation and critical conditions, the lowest flow on record was used in the updated analysis. In response to comments, additional analysis on full restoration of permitted appropriative rights was conducted. The results are described in the TSD addendum.

Comment: The RWQCB staff advised me that they were not going to treat flow as an issue.

Response: The Regional Board and USEPA are taking the issue of flow seriously. Regional Board staff have considered and continue to consider flow as a factor that could affect temperature. Analysis has been done to evaluate the nature and magnitude of the relationship between flow and temperature. The TMDL has been revised to emphasize this point.

Comment: At high flow most reaches are gaining. At low flow most reaches are losing. As flow declines fewer reaches are gaining. Data is provided showing losing

condition for flows less than 118 cfs. *The two reaches combined show losing condition. We suggest this shows that most reaches at low flow are losing.*

Response: In response to comments, Regional Board staff further researched information regarding gaining and losing streams. Both types of streams were modeled, given that both types of streams exist in the watershed. However, information on the relative proportions of gaining and losing streams was not available, nor was information available on whether streams had summer diversions. More site specific data is needed. The streamflow data collected in 1995-97 show a general pattern of drainage increasing with distance downstream. If most streams were losing, flow would show a pattern of decline with distance downstream. However, given the absence of data, flow is identified as an area of uncertainty. Although flow is not a pollutant and is not allocated in ths TMDL, we have dealt with concerns regarding flow by including a target on flow and temperature.

Comment: The commentor makes several comments regarding use of inlet temperature in the SSTEMP modeling.

Response: The inlet temperature was varied for the revised modeling. The results are described in the addendum to the TSD and show that inlet temperature is carried forward partially to the end of the reach. They are not carried forward fully because of the effect that local shading has on a stream reach.

Comment: The draft TMDL is based on a single reach. We suggest modeling a different date and the reach above Hendy Woods.

Response: In response to comments, additional modeling was conducted, as described in the TSD addendum.

Comment: The draft TMDL states that the inlet water temperature is related directly to flow. We do not have a rationale explanation of this unexpected phenomenon.

Response: USEPA agrees with the commentor that this is an unusual phenomenon. However, both modeling and monitoring data show the complexity. For example, the highest water temperatures are in July, but as flow declines into September temperatures decrease. This does not mean that stream temperatures that appear now in July could not be improved nor does this mean that surface flow should be removed. Salmonid summer habitat is more complex than MWAT temperature, and flow needs to be adequate for reasons beyond temperature.

Comment: The draft TMDL does not meet the requirement of 40 CFR 130.7. It places the entire burden of remediation on riparian landowners, agencies have acknowledged they have no idea how to implement. It is unlikely that we will see any temperature improvements for years.

Response: USEPA disagrees - the TMDL does meet the requirements set in law and regulation. Although the site specific effects of flow on meeting water quality standards for temperature cannot be determined at present, we have identified this as a major source of uncertainty. As a point of clarification, although we believe we stated we have not yet developed an implementation plan, we hope we did not inadvertently suggest that the agencies have no idea how to develop implementation measures. The Regional Board will be developing implementation measures. We agree with the commentor that stream improvements will take time.

Comment: The TSD focused on the most recent set of photos. There is no data presented ascribing responsibility to riparian landowners for activities that result in sun shining on the watershed.

Response: The TSD analyzed the most recent set of photos, reviewed historical photos and used GIS data compiled from field data on riparian conditions. The TSD concludes that the riparian condition could be improved and shade has been reduced from natural conditions. The historical photos show better riparian canopy than current. Additionally, riparian landowners, by removing shade, are increasing heat inputs to the stream.

Comment: Complaints filed by environmental groups against the SWRCB on water rights remain unresolved. Because of the Navarro watershed study and the pending TMDL, the complaint remains unresolved. The State is reticent to produce a more thorough and critical technical evaluation.

Response: In response to comments, additional modeling of flow was undertaken. Allocation of flow between users is the responsibility of the State.

Comment: Comments are made regarding California water law and public trust. *Statements by the SWRCB show that they believe that flow is the issue, how much flow is at issue.*

Response: The TMDL has been revised on the issue of flow. Flow affects temperature in the Navarro under certain circumstances, however site specific information is needed to determine the location and magnitude of the effects. In addition, flow is important to salmonid habitat in ways unrelated to temperature and thus outside the scope of the temperature TMDL.

September 22 letter

Comment: Several comments were made regarding the analysis. *Different reaches of the watershed were ignored. Summer flows are declining. Pumping events have been monitored to have significant effects on flow. Flow is the loading capacity.*

Response: Regional Board and USEPA responded by letter to these concerns to clarify the modeling. Additionally, the final TMDL uses additional modeling of flow and additional discussion of the importance of flow to Salmonids in the Navarro.

13 - Dennis Slota

Comment: While the document represents a good faith effort, I am concerned with the conclusion that stream flow is not a significant contributor. I disagree that the reach analyzed is characteristic of the basin.

Response: In response to comments, the Regional Board analyzed other types of reaches that could exist in the basin. While it is apparent that both gaining and losing reaches occur at various times in the watershed, the relative proportions of gaining and losing reaches are not known at this time. The TMDL has been revised to include this analysis and discussion.

Comment: I am aware that the deficit of data exists. I recommend that a small scale focused study be established to collect the data from additional stream reaches. I can cooperate in this effort.

Response: USEPA and the Regional Board both appreciate the suggestion. We will continue to discuss improved data collection efforts. We anticipate that if new analysis and information are available they will be used by the Regional Board in developing implementation measures.

14 - Robert Spinardi

Comment: The ongoing efforts to restore the anadromous fishery has followed a logical path. The USEPA's entry into the process deviates from the beneficial and cooperative efforts that have taken place to date. Any TMDL can only be based on conjecture. There are a multitude of factors that we are only just beginning to gather data on. I urge the EPA to state that insufficient data exist for any type of constructive TMDL to be established at this time.

Response: A TMDL is required under the Clean Water Act because the Navarro River is listed under Clean Water Act Section 303(d) as impaired due to sediment and temperature. Data reviewed during development of this TMDL indicate that the amount of sediment has been increased significantly and can negatively affect salmonid habitat, and reduced shade has negatively affected temperature conditions for fish. Much of the data for the TSD was taken from the Navarro Restoration Plan. While the commentor is correct that there are data gaps, USEPA has concluded that sufficient information exists on both sediment and temperature to set goals for improvements through a TMDL. For example, the sediment TMDL analyzed the entire basin using photo analysis and thus the identification of current roads and landslides has little uncertainty. USEPA policy is to use best available information in

the TMDL process and if uncertainty exists to provide a margin of safety that benefits the fishery.

15 - Christopher G. Surfleet, Mendocino Redwood Company

Comment: While streamflow may not be important for stream temperature in the Navarro now, future land conversions into vineyards or agriculture could be a problem. (The commentor provides information on the potential for land conversion.) *I suggest that some consideration be given to changes in stream flow to guard against potential problems.*

Response: In response to comments, the analysis and discussion of flow has been revised in the final TMDL. In addition, the SWRCB Division of Water Rights will not permit future summer diversions unless the permit applicant can prove that diversions will not harm Salmonids.

Comment: The current shade scenarios are inaccurate. The commentor provides specific examples of their measured values and TSD values.

Response: The GIS information will tend to underestimate current shade conditions for stream reaches that have not been logged, roaded etc. and overestimate shade where riparian vegetation has been reduced in the recent past because the GIS data is from the early 1990s. The load allocations are designed to use field data, not GIS data, during implementation.

Comment: The shade targets are too high, natural shading and temperature is being over-estimated in the Navarro. The commentor compares targets in the South Fork Eel TMDL and the Navarro TMDL.

Response: Regional Board used a solar pathfinder to compare predicted and measured shade in the Navarro with good results. Thus, we are using the best available information.

Comment: The sediment target for percent fines needs to clarify between wet or dry sieving. I suggest that consideration be given for holding some workshops for landowners on how to monitor and measure the targets you propose.

Response: The Regional Board is in the process of developing a monitoring plan for the North Coast. USEPA will pass along the suggestion that workshops be held to better refine the protocols.

16 - Phil Wasson

Comment: The scientific data to monitor sediment loads, habitat conditions and fish counts are not reliable and you are relying on rough approximations.

Response: USEPA believes that although the sediment loads calculated are not precise, the information on the ratio of natural to unnatural sediment is sound. Given that increased sediment will affect stream morphology and habitat conditions, and these conditions are known to reduce salmonid populations, we believe the scientific linkage is sound, despite the lack of quantitative models that include all three: sediment, habitat, and fish populations.

Comment: Costs and impacts are not proposed in the TMDL.

Response: TMDLs are not required to analyze costs. In addition, costs are extremely dependant upon the implementation strategy, time frame and coverage. As the implementation strategy has not been developed, costs would be difficult to estimate.

Comment: If local landowners have any say, I haven't seen or heard of any.

Response: In response to comments, USEPA and the Regional Board have made revisions to the TMDL, especially in regard to flow and temperature. EPA will provide copies of all public comments to the Regional Board for their consideration during development implementation measures.

Comment: To restore fish populations, you must first eliminate predators such as sea lions, seals and otters.

Response: Because the scope of a TMDL is limited to the listed factors of sediment and temperature, the TMDL does not address all possible factors that could affect fish populations. USEPA is not aware of any studies that found that natural predators are affecting salmon populations.

Comment: I am opposed to establishing a TMDL.

Response: A TMDL is required under the Clean Water Act because the Navarro River is listed under Clean Water Act Section 303(d) as impaired due to sediment and temperature.

17 - Dennis Walsh

Comment: The commentor makes several observations about how natural sediment varies geographically (from Sierras to North Coast), seasonally (wet weather and dry weather) and by rainfall. *Salmon and steelhead have existed during periods of high rainfall (and thus high sediment.) The need for regulation is thus premature. The*

regulation of land uses may not have a material effect on either long term improvement or degradation.

Response: USEPA agrees with the commentor that natural sediment delivery varies by geology, rainfall patterns and land use. Stream systems have developed their shapes and flood plains in response to this variation. Within this natural variation, salmon have evolved and thrived. However, USEPA used the information on a nearly doubling of sediment delivery in the recent period to determine that the stream system has been altered (pool filling, channel aggradation etc.) to the detriment of salmon. The scientific literature on increased sediment effects on fish is very robust.

Comment: The U.S. Government should not be involved in this issue. The issue should be decided by the local voters.

Response: The USEPA's responsibility under the Clean Water Act to set TMDLs has been recently reaffirmed by the Courts. In addition, a court consent decree is mandating the schedule for TMDLs in the North Coast. The State of California is responsible for developing implementation measures for the TMDL.

18 - Mary Lou Walsh

Comment: My first concern is the variety of sources of data are based on hearsay and piecemeal observations. The landforms in the Navarro river were created over millions of years. Logging and other agricultural sources may contribute but in what proportion compared to the forces of nature has not been determined. A hasty, one year study is not substantive. I believe that we need more reliable information before regulations are adopted.

Response: The Clean Water Act requires that TMDLs be established for waters listed as impaired by pollutants. In addition, the science behind this TMDL is substantial. Although data compilation and analysis were performed during a one-year period, the Regional Board and USEPA have researched and used sediment budget methods for nearly five years now in the North Coast of California. We have obtained substantial information from several consultants and have evaluated background research performed by several academic experts. In addition, we analyzed both existing data and new data collected for the report.

We agree with the commentor that the proportion of manmade/natural sediment is a key piece of information. The TSD found that sediment inputs into stream have been nearly doubled under current land use practices. During implementation, we expect the Regional Board to use site specific information.

Comment: There has been inadequate notification and time allowed for public input. No social or economic impacts have been studied or evaluated. The TMDL has a

false sense of urgency. The courts could grant an extension of time. EPA has not provided any details of the consent decree.

Response: The TMDL provided several opportunities for public notification and a public response period. The Regional Board intends to solicit additional public input and consider economic impacts during development of implementation measures for the TMDL.

Comment: The jurisdiction for the TMDL belongs to the State of California. The Guidance for Developing TMDLs does not give EPA any authority to develop TMDLs independently. Mr. Dave Smith stated that the guidance was prepared after consulting with stakeholder groups. Who are the stakeholder groups? What public comments were considered. The democratic process requires public disclosure.

Response: We agree that under the Clean Water Act the primary responsibility for establishing TMDLs is the State's. However, several courts have ruled that EPA must establish TMDLs if a State fails to act. Under the consent decree, EPA is required to establish this TMDL because the State did not do so by December 31, 2000. Additionally, we note that the Regional Board contributed significantly to development of this TMDL, and EPA relied heavily on the Regional Board's data and analysis in the TSD.

Regarding the "Guidance for Developing TMDLs in California", this action was taken pursuant to authorities and obligations of the Clean Water Act, implementing federal regulations, and the requirements of the consent decree. The TMDL guidance was developed to assist the State and interested parties in interpreting Clean Water Act and regulatory requirements. EPA developed the guidance in consultation with representatives of several stakeholder groups, including:
- Joe Brecher, representing North Coast environmental groups,
- Tess Dennis, representing California Farm Bureau Federation,
- Margie Nellor, representing Sanitation Districts of Los Angeles County,
- Chris Crompton, representing County of Orange,
- David Beckman, representing Natural Resources Defense Counsel,
- Tom Grovhoug, representing Tri-Tac,
- Craig Johns, representing industrial dischargers,
- Jon Bishop, representing Los Angeles Regional Water Quality Control Board, and
- Stefan Lorenzato, representing State Water Resources Control Board.

EPA held several meetings with these individuals to invite input on the guidance, then provided a draft guidance for informal public review on October 26, 1999. The notice of availability of the draft guidance for public review was distributed through mailings to a list of parties interested in TMDL issues and a posting on EPA Region 9's TMDL web site. Approximately 10 comment letters were received which principally addressed the scope and organization of the guidance. The guidance was finalized on January 7, 2000.