State of California
North Coast Regional Water Quality Control Board

PUBLIC COMMENTS & RESPONSES

for the

Action Plan and Staff Report for the Scott River Sediment and Temperature Total Maximum Daily Loads

November 22, 2005

Appendix G

State Water Resources Control Board
North Coast Region
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RESPONSE TO PUBLIC COMMENTS

Scott River Watershed
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The following are summaries or quotes of, and responses to, the more substantive comments received on the above-noted Scott River Watershed TMDLs. There are two parts to this document.

1. **General Comments and Responses**

Comments from individuals that addressed common themes were grouped together and responded to simultaneously. These comments are summarized as a general comment and then given a general response. The general comments and responses are divided into three categories; comments related to the Action Plan, the Sediment Analysis, and the Temperature Analysis. The following is a summary list of the general comments:

Action Plan

1. The Action Plan is not compliant with Water Code Section 13242.
2. The Action Plan is too vague with respect to requirements.
3. There was an inadequate level of public involvement in the TMDL process.
4. The Action Plan should explicitly consider factors such as reasonableness, feasibility, availability of funds, etc.
5. Legacy effects need to be considered.
6. Water quantity, water use, groundwater need to be addressed.
7. County ordinance regarding ground-disturbing activities.
8. Data transparency.
9. Timber harvest review process adequacy.
10. Monitoring plan adequacy.
11. The Action Plan is redundant and overlapping regulation.
12. The Action Plan needs to address sequencing and prioritization of actions.
13. Peer review process was not sufficient.
14. Economic analysis was not adequate.

Sediment

15. Effects of Multiple Interacting Human Activities (EMIHAs).
16. Legacy practice issues related to sediment.
17. Rain on snow and peak flow events.
18. SHALSTAB and landslides.
19. Effects of wildfire.
20. Appropriateness of information included in the TMDL.

Temperature

21. Use of early 20th century photos.
22. Water use (evapotranspiration) by riparian vegetation.

After each general comment, a list of commenters that expressed issues related to that comment is provided. Those commenters are referenced in the general comments using the following numbered list:

List of Commenters

1. Arcata Public Workshop (ARC) pg. G-20
2. California Department of Transportation (CDOT) pg. G-29
3. California Forestry Association (CFA) pg. G-29
4. Californians for Alternatives to Toxics (CAT) pg. G-35
5. Coast Action Group (CAG) pg. G-35
6. Community Clean Water Institute (CCWI) pg. G-42
7. Environmental Protection Agency – Region 9 (EPA) pg. G-42
8. Environmental Protection and Information Center (EPIC) pg. G-47
9. Friends of the Gualala River (FGR) pg. G-49
10. Fruit Growers Supply Company (FGS) pg. G-50
11. R.A. Gearheart (RAG) pg. G-54
12. Richard Gienger (RG) pg. G-55
13. Larry Hanson (LH) pg. G-56
14. Hoopa Valley Tribe (HVT) pg. G-57
15. Humboldt Baykeeper (HB) pg. G-58
16. Karuk Tribe (KT) pg. G-59
17. Kawaiisu Tribe of Tejon (KWAT) pg. G-59
18. Klamath Alliance for Resources and Environment (KARE) pg. G-60
19. Klamath National Forest (KNF) pg. 62
20. Klamath Riverkeeper (KRK) pg. G-64
21. Mendocino Sierra Club (SC) pg. G-67
22. Michele Marta (MM) pg. G-68
23. Daniel Myers (DM) pg. G-69
24. National Marine Fisheries Service (NMFS) pg. G-69
25. Denver Nelson (DN) pg. G-72
26. New 49ers (49ERS) pg. G-73
27. North Coast Environmental Center (NEC) pg. G-74
28. Pacific Coast Federation of Fishermen's Associations (PCFFA) pg. G-75
29. Quartz Valley Indian Community (QVIC) pg. G-76
30. Rudy Ramp (RR) pg. G-97
31. Sandy Bar Ranch and Nursery (SBRN) pg. G-98

2. **Individual comments and responses**

Comments from individuals were addressed by a general response, an individual response, or a combination of both. A response to an individual comment may include a reference to a 'General Response #x'. This directs the reader to refer to the indicated general comment. Note that there may be other information provided even though the comment is partially answered by a general response.

Comments that were not addressed by the general responses were given individual responses. The individual comments and responses are grouped by commenter. Commenter sections are listed alphabetically, and the page numbers are given in the above list. Within each commenter's section reside the comments that the staff judged substantive and germane to the proposed action. The entire submitted text was not included. Each comment is identified by a code that references the initials of the person or entity that submitted the comments. These codes may be referenced in other responses i.e. 'see response to ARC-21'.

The Regional Board staff held three Public Workshops at which they received oral comments from the public. The Workshops appear as single commenters in this document, but inside each Public Workshop section, the names of the individuals who commented are given.

GENERAL COMMENTS AND RESPONSES

Action Plan Related Comments

General Comment 1 – Compliance with Section 13242 (Comment made by 1, 5, 6, 8, 9, 13, 14, 15, 20, 22, 23, 25, 27, 28, 29, 30, 31, 47, 48)
Many commenters expressed a number of related concerns about the adequacy of the Action Plan to actually lead to water quality compliance. Some commented that the Action Plan relies too heavily on encouragement and voluntary actions, approaches that the commenters say have not led to overall improvements in water quality or to resolution of the impaired conditions on the watershed though they have had many years to do so. Several commenters questioned whether an Action Plan that relies so heavily on existing regulatory authorities can lead to water quality compliance and resolution of the listings, given that these authorities already exist and have not been demonstrated to be effective in improving water quality. Many commenters also asserted that the Draft Action Plan is not compliant with Section 13242 of the Porter-Cologne Water Quality Control Act, which states that implementation programs for achieving water objectives shall include a description of the actions necessary (including appropriate action by any entity), a time schedule, and a 'description of surveillance' to determine compliance (often referred to as a monitoring plan).

Response to General Comment 1
The identification and listing of impaired waters is a requirement of the federal Clean Water Act. For waters identified as impaired, a TMDL must be prepared. The Porter-Cologne Water Quality Control Act requires that water quality control plans (also known as Basin Plans) must meet the requirements of Section 13242, as described above.

The management and regulation of nonpoint sources is in a period of rapid change. The Clean Water Act, enacted in 1972, addresses both point and nonpoint sources of pollution. The initial and primary focus of implementation of the Clean Water Act, however, was control of discharges from point sources, such as industrial and municipal wastewater facilities. While there has long existed authority, under both the federal Clean Water Act and State water quality laws, to regulate nonpoint sources, that effort has lagged behind the effort to control point sources, due in large part to the fact that nonpoint sources implicate a very broad range of human activities, businesses and land use decisions that have not traditionally been subject to much regulation by the State, and public acceptance for such regulation has been slow to develop. As point source discharge management has improved, and as recognition of the significance of nonpoint sources in water quality has grown, increasing attention has been directed at nonpoint source discharges in the last few years. The TMDL program in the state of California is about five years old. The State Water Resources Control Board adopted a Nonpoint Source Control Policy in May 2004. The Nonpoint Source Policy does not include any new authorities for management of nonpoint sources, though it does clarify the ways in

which existing authorities can be used to regulate and manage nonpoint source waste discharges.

So while the tools available to the Regional Water Board for regulation of nonpoint sources have existed for some time, the application of these tools in a consistent, persistent, and coordinated manner has not. Regional Water Board staff anticipate that consistent and coordinated application of these tools will lead to water quality improvements and compliance for the listed constituents in the Scott watershed. The Regional Water Board has made clear its intent to apply these tools to the solution of sediment discharges from nonpoint sources in Resolution R1-2004-0087, the Sediment TMDL Implementation Policy.

While doing the investigation and analysis of existing sources of impairment and other groundwork for this proposed TMDL, staff became aware that, due in part to the availability in recent years of grant monies, quite a bit of voluntary work was already underway or being considered to address nonpoint source issues in this area. This work is helping to generate greater public acceptance of and familiarity with measures that can be taken to control nonpoint sources effectively. In staff's view, it seems efficient and prudent that the Regional Water Board would build on these efforts as a starting point, realizing the various benefits of people doing the "right thing" for water quality without having been ordered to do so.

Therefore, the encouragement of ongoing self-directed activities is part of and the beginning point for the Action Plan. The Plan calls for encouragement with respect to reduction of sediment waste discharges from private roads, Siskiyou County development of a mechanism to address sediment waste discharges resulting from land-disturbing activities in the County, preservation and restoration of shade-producing riparian vegetation on private lands not covered by the timber harvest planning process, water conservation, flood control structure management, and grazing. Other activities, including CalTrans stormwater discharges, public and private timberlands, County roads, projects requiring clean Water Act Section 401 certification, and covered under existing permits, waivers, or will be covered under Memoranda of Understanding. This mix of direct application of existing permitting and enforcement authorities with encouragement of self-directed activities is a reflection of the state of development of nonpoint source discharge management not just in the North Coast Region, but in California and the nation.

Effective regulation of nonpoint source discharges affects rural communities, requiring attention to water quality in a more formal manner than has been expected in the past. For many of these communities, including the Scott watershed community, dealing with water quality regulatory agencies is relatively new, and there appears a perception that it has the potential to fundamentally alter or even destroy their communities. While this outcome is neither the intent or the mission of the Regional Water Board or its staff, the Board and staff recognize that addressing nonpoint source discharges will require change over a period of time as means and methods are developed that both meet water quality standards without causing harm to any part of the larger Klamath Basin community.

Encouraging existing self-directed efforts is a logical first step for several reasons. First, the people of California have recognized the value of such activities and the need for funding to support such activities by passing several bond measures in recent years. Second, encouraging existing efforts has the most potential to show results in the short term because it doesn't require the creation of new mechanisms or relationships to implement on the ground improvements.

At the same time, Regional Water Board staff recognize that simply encouraging ongoing efforts is no guarantee that water quality improvements will be realized, and the Action Plan explicitly provides that where cooperative and voluntary efforts are not timely employed, are not working, are insufficient or ineffective, regulatory and enforcement tools will be used as necessary to recover and protect beneficial uses, as mandated by law. To address commenters' concerns regarding lack of timeframes for these activities to demonstrate effectiveness, the Action Plan has been changed to include yearly progress reports on implementation progress to the Regional Water Board, and a formal evaluation and report on effectiveness of self-directed implementation activities within five years from approval of the TMDL and Action Plan. The timeframe does not inhibit the Regional Board from taking any needed regulatory or enforcement steps outside the annual progress report process or before the five years is up.

With these additions, each activity in the Action Plan has an associated timeframe for completion of the activity. In many cases, the activities identified are a planning phase, whose completion will include timeframes for implementation of actions addressing the impairments.

With respect to the 'description of surveillance' called out in Section 13242, the Action Plan calls for the Regional Board to develop a monitoring plan within one year of approval of the TMDL (Section VI of the Action Plan). In addition, the Executive Officer has pre-existing and retained authority to require monitoring of any activity that is causing or is likely to cause waste discharge at any time.

General Comment 2 – Action Plan Clarity (Comment made by 3, 15, 40, 46)
There is concern that the Action Plan is too vague with respect to what is required of responsible parties. Some commenters expressed concern that the Action Plan does not provide responsible parties with certainty regarding compliance obligations. Other commenters expressed concern that the Action Plan doesn't identify specific actions or practices required of responsible parties. In addition, the Action Plan does not specify whether Erosion Control Plans or Monitoring Plans would be required of responsible parties.

Response to General Comment 2
In many cases, the activities identified in the Action Plan are a planning phase. The results of the planning phase will include descriptions of actions and next steps needed to address waste discharges, thus providing more clarity with respect to actions and timeframes. For other activities where Erosion Control Plans and Monitoring Plans may be required, management of road systems for example, the uncertainty with respect to

potential requirements exists now and doesn't change with adoption of the TMDL Action Plan.

With respect to ECPs and MPs, the Action Plan commits the Regional Board to developing criteria regarding when an ECP or MP would be required. Any specific request to prepare an ECP or MP would be supported by factual information describing the conditions and need for such plans.

Also note that with the benefits of the results of these planning tools, all subsequent regulatory or enforcement actions that may be necessary will be more informed and appropriately tailored to conditions on the ground, and both more effective and more reasonable as a result.

General Comment 3 – Public Involvement (Comment made by 1, 3, 14, 16, 27, 28, 36, 42, 47)

Many commenters expressed concern that the level of public involvement in the TMDL process to date was not adequate. Commenters either requesting a higher level of involvement or who are acknowledged to have a role in the TMDL and its implementation include: landowners; responsible parties; local, state, and federal agencies; tribes; downstream communities including commercial and sport fishers and recreational users, and their local, state and federal governments and representatives. There was specific criticism offered by downstream community members regarding participation in the TMDL Technical Advisory Group, by members of the TAG regarding input to the Action Plan, regarding their opportunities for comment on the Public Draft TMDL and Action Plan, and by many parties regarding participation in developing, reviewing and commenting on future study plans, studies and other processes that either are identified or that may be identified as part of the TMDL implementation.

Response to General Comment 3

The Regional Water Board and staff are committed to including all stakeholders and tribes in the implementation phase of the TMDL.

There have been numerous opportunities for public input during the development of the Scott TMDLs, including:

- Presentations and updates to the Regional Board in public meetings, including on February 10, 2004, May 4, 2005 and August 10, 2005
- CEQA scoping meeting on June 28, 2005
- Public draft TMDL and Action Plan, released on September 20, 2005
- Regional Board workshop on October 12, 2005
- Additional workshops on October 18, 2005 (Yreka) and October 19, 2005 (Arcata)
- Presentations to the Klamath Basin Fisheries Task Force or subgroups on 4 occasions in 2004 and 2005.

Other outreach and coordination activities conducted as part of this project are discussed in Chapter 11 of the Staff Report.

In response to requests during the Public Comment period for the draft TMDL, staff added a public workshop in Arcata. When public meetings or workshops are scheduled as part of the TMDL process, staff will provide opportunities for public comment in multiple locations, including one interior and one coastal location. Staff will strive for participation of the full range of stakeholder and tribal interests in any future processes associated with the TMDL Action Plan. The Regional Water Board will continue to provide opportunities for comment on TMDL reports and proposed implementation actions consistent with current procedures. This would include opportunities for comment on permits, permit revisions, and enforcement actions.

General Comment 4 – Funding Contingencies (Comment made by 19, 34, 35, 36, 42, 43, 46)

Commenters suggested that the Action Plan should include language making actions contingent on a variety of factors such as reasonableness, feasibility, practicality, and availability of funds. Several commenters identified availability of funds as a key consideration in the ability of a responsible party to fulfill its obligations with respect to the TMDL Action Plan.

Response to General Comment 4

With respect to development of MOUs, ECPs, MPs, the groundwater study, and any other plans or studies addressing implementation actions and timeframes, the Action Plan already allows for consideration of reasonableness, feasibility, practicality and availability of funds. Since these studies, plans, or agreements are either developed by the responsible party or with the Regional Board, the Regional Board expects responsible parties to propose actions and timeframes, including prioritization of actions. These proposals presumably would reflect the responsible parties' assessment of reasonableness, feasibility, practicality, and availability of funds. With respect to actions relying on encouragement, there is no need to include "reasonableness" limitations, as there is nothing enforceable about such actions. If permits or other regulatory or enforcement actions become necessary, such actions would be subject to existing terms and provisions of the Basin Plan including existing hearing procedures. The concerns raised by the comments would be appropriately considered at that time.

It should also be noted that, at a larger level, progress of actions relying on encouragement of ongoing self-directed efforts is not contingent on availability of funds. While the Regional Water Board recognizes financial resources as a potential constraint, and is committed to helping responsible parties find funds to implement on-the-ground actions that lead to improved water quality, the success of self-directed efforts will be evaluated on the basis of documented implementation progress in terms of water quality.

Finally, to the degree the Action Plan relies upon self-directed, voluntary and cooperative efforts before resorting to existing command and control techniques, these voluntary elements are an *opportunity* for the community to try to reduce the need for regulation – these opportunities do not constitute mandatory enforceable directives, and do not create a legal "safe harbor" from water quality regulation or enforcement. In short, reasonable,

feasible, funded, or not, all of the voluntary options are just that, options to be tried to perhaps avoid or minimize the eventual need for permits or orders.

General Comment 5 – Effects of Past Land Use Practices (Comment made by 29, 34, 35, 36, 42, 46)
Several comments identified the effects of past land use practices (what some call "legacy" sources) or natural processes as potentially confounding progress toward water quality compliant conditions. Specific comments addressed the presence of large areas of dredge mine tailings, the channel straightening and riparian vegetation removal activities of the Army Corps in the late 1930's in response to floods, the difficulty of reestablishing stable riparian vegetation in the absence of a more natural, sinuous river channel, especially along the mainstem Scott River, and the potential effects of future floods and fires.

Response to General Comment 5
The TMDL and Action Plan do not specifically address the dredge mine tailings or channel conditions. Since actions in these areas are primarily initially addressed under encouragement of ongoing self-directed efforts, the local groups assuming responsibility for making and demonstrating progress on self-directed efforts are also responsible for identifying, understanding and developing solutions to these issues so as to ensure that self-directed efforts are successful initially in trending towards water quality compliance and eventually in meeting water quality standards. If any individual parties are going to be held legally responsible for abating or controlling dredge mine tailings or other so-called "legacy" sources, that would occur in the context of a permitting or enforcement process, under existing regulatory mechanisms, that allow for the responsible parties to be heard, in an administrative review process, on the question of who should be held accountable for such sources, as those issues may arise.

General Comment 6 – Water Use and Groundwater (Comment made by 1, 10, 11, 13, 14, 20, 21, 23, 25, 27, 28, 29, 31, 42, 46, 47, 48)
A large number of commenters expressed concern about the lack of specific actions in the Action Plan with respect to water quantity and its linkage to water quality. In particular, the effects of reduced surface water flow on water temperature were noted in many comment letters. Specific actions proposed included asking the State Water Resources Control Board to undertake a study of groundwater and surface water conditions, a moratorium on well drilling, and calling on the SWRCB, DFG and the California Department of Water Resources to take various actions. In addition, there was concern expressed that Siskiyou County lacks the technical resources to design or perform the study identified in the Action Plan.

Response to General Comment 6
The temperature analysis evaluates the effects of surface water and groundwater depletion. The analysis demonstrates the importance of groundwater inflows in the alluvial portions of the Scott watershed on water temperatures. However, the current information and resources were not sufficient to determine the impacts of water use on depleted groundwater inflows. The action plan identifies a process to develop the

information to understand the interaction of water use and groundwater inflows to the river. It is not the expectation or the assumption of the Regional Board that Siskiyou County would design or perform a groundwater study without assistance. The Regional Board expects that the County would engage qualified technical support that could include the Department of Water Resources or the US Geological Survey, for example.

To address concerns regarding timelines for groundwater investigations, the text of the Staff Report has been modified to identify a course of action should the primary action be unsuccessful. This action would request the involvement of the SWRCB in performing the investigations. The Regional Water Board has the pre-existing authority to make such a request of the SWRCB, and therefore there is no need to specifically provide that authority in the Action Plan.

General Comment 7 – Siskiyou County Ordinance (Comment made by 18, 27, 28, 30, 34, 46)
A number of comments were received with respect to the Action Plan element addressing the need for a County ordinance addressing roads, land disturbing activities, and grading activities outside of subdivisions. Some comments supported having this action. Other comments noted that the County has a Land Development Manual in the process of revision that addresses the underlying concerns of the Regional Water Board with respect to this issue.

Response to General Comment 7
The action item to encourage the County to address the potential for land disturbance to increase sediment delivery to watercourses has been retained, with modifications to the language to allow for an ordinance or equivalent County-enforceable mechanism, and with a change in the timeline from 1 year to 2 years for County adoption.

General Comment 8 – Data Transparency (1, 14, 28, 29, 47, 48)
Comments were received that data used as the basis for the TMDL analysis and data developed from or used in any future studies should be available to all stakeholders for review.

Response to General Comment 8
Regional Board staff have strived to make data and information used in the analysis available, both by explanations in the Staff Report and by providing information upon request from interested parties. The information and methods used in the Staff Report are public record and are available to the public. Regional Water Board staff agree that supporting data should be available, and that the decision making process should be transparent. Regional Water Board staff also recognize the responsibility that accompanies the development and dissemination of data. It can be irresponsible to release data without supporting information (metadata) that defines the appropriate use and limitations of the data. The amount of data used to develop the Scott River TMDLs is substantial, and so development of metadata is a significant task that will take a lot of time. Regional Water Board staff have offered to make specific data available, and have

done so in a number of instances. However, a comprehensive collection of supporting data, with appropriate metadata, has not been prepared due to staffing limitations.

General Comment 9 – Timber Harvest (Comment made by 3, 5, 8, 29, 48)
Many comments were received on the timber harvest review process and its adequacy. Some commenters see the Forest Practice Rules administered by the California Department of Forestry as sufficient to protect water quality, that the Board of Forestry is the appropriate venue to promulgate regulations associated with forestry on private lands, and that any additional regulation would be duplicative and expensive. Other commenters held that the timber harvest review process has not been successful in maintaining or restoring water quality in the Scott watershed.

Response to General Comment 9
The Regional Water Board (Regional Board) and the Board of Forestry (BOF) and Department of Forestry and Fire Protection (CDF) have different but to some degree overlapping authorities and responsibilities imposed on them by the Legislature with regard to regulation of timber harvest activities. The regional and state water boards (Boards) have the primary responsibility for the coordination and control of water quality in California. Further, it is the mission of the Boards to preserve, enhance and restore the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations. The BOF and CDF have lead authority for maintaining a system of timberland regulations and use which ensures that timberland productivity is maintained, enhanced and restored where feasible and the goal of maximum sustained production (MSP) of high-quality timber products is achieved while giving consideration to environmental and economic values. Given the different Legislative mandates, the Boards and BOF and CDF must work closely to assure adequate water quality and beneficial use protection from timber harvest activities.

The Boards have a history of actively working with the BOF and CDF to promote new rules and policies for water quality protection as they relate to timber harvest activities on private lands. The Boards regularly participate in BOF Forest Practice Rule (FPR) and policy development for addressing water quality issues. Often, the FPRs and policies provide a minimum standard that adequately protects beneficial uses and water quality. There are instances, however, where the FPRs may not provide adequate beneficial use and water quality protection to ensure Basin Plan compliance, and the Regional Board utilizes its own authority to fill that gap. For example, the Regional Board has adopted general waste discharge requirements that require remediation of sediment discharges that violate the Basin Plan during the life of the timber harvest plan, and require monitoring of such sites to validate success. In other instances, FPRs that otherwise provide a good beginning for protection are temporary, only to sunset after a defined period of time. For example, the Threatened and Impaired (T&I) Rules (14 CCR 916.9, 936.9, 956.9), which provide for larger stream buffers to enhance large woody debris recruitment, shade and microclimate control, and sediment filtering, provide a good starting point for achieving some TMDL goals on Class I streams. Unfortunately, the T&I Rules are scheduled to sunset in December 2006 thus compelling the Regional

Board to consider using their own authority to assure adequate protection of beneficial uses and water quality.

In the CDF timber harvest plan review process, the Regional Board serves as review team agency providing review, inspections, and recommendations on a limited number THPs. As the lead agency for THP approval, CDF ultimately determines which recommendations are accepted and the contents of the THP. If the Regional Board determines more water quality protection is necessary to result in compliance with the Basin Plan, they must occasionally rely on the Regional Board's own authority. In addition to the augmentive protections provided by the general waste discharge requirements and general waiver for timber described above, a more site-specific example is Regional Board developing watershed-wide waste discharge requirements where cumulative watershed effects have not been adequately addressed.

While Regional Board staff prefer to, and by and large do, achieve the Legislative mandate through working with the BOF and the CDF plan approval process, the Regional Board is not precluded from using their own authority to achieve its mandate. (*See eg,* Pub. Resources Code § 4514.)

General Comment 10 – Monitoring (Comment made by 1, 12, 29, 35, 36, 48)
Comments were received asking that a monitoring strategy be developed that includes participation of the public in its development, addresses trend monitoring to assess recovery, and self-monitoring by responsible parties.

Response to General Comment 10
The Action Plan commits the Regional Water Board to developing a monitoring strategy within a year from final approval of the TMDL and Implementation Plan. Chapter 6 of the Staff Report discusses types of monitoring and an overall set of monitoring expectations. The Regional Water Board expects specific monitoring proposals from some responsible parties, and may require monitoring plans from other parties at the discretion of the Executive Officer. The Regional Water Board would welcome the participation of stakeholders and tribes in developing an overall strategy.

General Comment 11 – Redundant/Overlapping Regulation (Comment made by (3, 18, 35, 36, 40, 46)
Several commenters expressed concerns that the Action Plan will place a redundant and overlapping regulatory structure on landowners.

Response to General Comment 11
It is not uncommon or new that there are overlapping regulatory authorities of both federal and state agencies on landowner activities that have the potential for effects across the various regulatory agencies' reponsibilities. These include but are not limited to water pollution, air pollution, fisheries, endangered species, toxics, landfill regulation, labor laws, etc. Again, however, the Action Plan creates no new regulatory authorities or enforcement tools, and will neither add to nor reduce the scope of the existing overlap between regulatory agency oversight. The Regional Board values interagency

cooperation and the efficiencies to be derived from working together to minimize redundancy in areas of overlap. This process is already underway, for example, through Regional Board staff participation in the timber harvest plan team review process, the Coho Recovery Strategy and Scott-Shasta Recovery Team efforts, and through participation in informal consultation with federal wildlife agencies on Endangered Species Act issues. Additional opportunities for coordination of efforts have been identified during the public comment period on this document, and include coordination of grazing and riparian management activities with DFG, and coordinating restoration project permit approvals among responsible agencies.

General Comment 12- Sequencing and Prioritization (Comment made by 1, 19, 24, 29, 35, 36, 40, 42, 46, 47, 48)
Many commenters expressed concerns regarding both the sequencing of actions and prioritization of actions needed to meet water quality objectives. Comments addressed both the need for additional planning before on-the-ground implementation can begin, and the need for prioritization of activities. Some commenters expressed the view that successfully addressing some of these activities or conditions will require a better understanding of processes not explicitly addressed in the TMDL. Examples cited include restoration of channel complexity and sinuosity as a prerequisite for stable riparian vegetation, and an overall plan for addressing mine tailings before bank erosion caused in part by the presence of the mine tailings can be resolved

Response to General Comment 12
The TMDL effort was intended to identify general types of activities or conditions that are most important to address with respect to sediment and temperature impairments. The TMDL effort seeks to identify actions needed to meet water quality standards. It is not intended to be a watershed restoration plan, which would appropriately consider many issues in addition to water quality compliance. That said, if the local community believes that a watershed restoration plan is necessary to establish an overall framework for restoration activities, including those necessary to address water quality compliance, the Regional Board would work to assure that such a plan maximized water quality benefits. It should also be clear however that many actions that would contribute to water quality improvements can be taken absent an overall watershed restoration framework. With respect to prioritization, Regional Board staff would encourage locally based efforts toward this goal, since the TMDL is intended to provide an analysis at a watershed scale, not at the site level. In the case of individual landowners or land stewards who have been asked or are preparing plans, the Regional Board expects that prioritization of actions would be proposed as part of such plans.

General Comment 13 – Peer Review (Comment made by 3, 34, 36, 41)
A couple of commenters requested additional peer review of the Staff Report, and of methods used in developing the TMDL analysis.

Response to General Comment 13
The science that was used to define the TMDL has been peer reviewed by two separate reviewers as part of the Basin Plan Amendment process. Dr. Douglas Piirto and Dr. Don

Erman were the scientific peer reviewers and they submitted their reviews on August 10, 2005 and July 25, 2005 respectively. Once the reviews are submitted to the Regional Board, they become part of the public record. The final Staff Report includes a new appendix with peer review comments and staff responses. Changes to the Staff Report in response to peer review comments were incorporated into the Public Draft. The Action Plan is not subject to peer review because it is a matter of policy. The Action Plan and the Staff Report were presented at three public workshops at which the Regional Board staff explained the elements of these documents. This satisfies the requirements for both peer and public review as set out in the state Basin Planning procedures for the adoption of science-based Basin Plan amendments.

General Comment 14 – Economics (Comment made by 18, 34, 35, 42, 46)
Some commenters expressed concern that either an economic analysis was not prepared or that the economic analysis that was prepared is inadequate. There were concerns about the impact to landowners in Siskiyou County, particularly those managing agricultural lands. Specifically, commenters requested that a total cost of implementation be included in the analysis.

Response to General Comment 14
First and foremost, there are no new mandatory legal obligations or water quality standards imposed on anyone through the proposed Action Plan, as it relies solely on the use of existing regulatory and enforcement mechanisms to augment voluntary activities as needed to attain existing water quality standards. There will therefore be zero new costs imposed by the proposed Action Plan.

Gerry Horner, an economist that works for the State Water Resources Control Board, prepared the economic impacts analysis for the Action Plan. It is included in Chapter 6 of the Staff Report. This analysis, however, fails to take into account the fact noted above -- that the measures required to comply with existing water quality standards are existing obligations of landowners and operators under existing law, and are therefore not new costs. Even assuming, for the sake of argument, however, that the costs related to attaining water quality standards in the manner mapped out in the Action Plan were treated as if they were new costs, the costs of the Action Plan are justified. There are very substantial, but currently unquantified costs associated with the failure to adequately protect beneficial uses (i.e., loss of fisheries, both direct commercial and indirect costs to fishery dependent businesses, tribes, fishery-dependent jobs and communities), and the failure to comply with existing water quality standards. The implementation of the Action Plan is expected to involve a decades long process to achieve and maintain water quality standards: most costs to dischargers to implement the measures in the Action Plan will be spread out as well. There are also many potential sources of funding for implementation including programs funded by Proposition 40 and Proposition 50. Monitoring plans will be developed on the local level and will also take funding into consideration.

The State Board's economic analysis addresses impacts to agriculture and other land management activities by listing the costs of land management practices associated with

the Action Plan measures; for example, planting trees, fencing, and installation of a remote water supply. The economic analysis does not provide a total cost for a given Action Plan measure or land practice because the extent of implementation required to meet the load allocations is unknown. The Action Plan lays out a collaborative process that allows for adaptive management and reassessment. Since the Action Plan is not imposing any new water quality objectives, directly enforceable requirements, or requiring a specific amount of implementation, the estimate of the total cost is not a meaningful estimate of economic impacts. Listing the cost of possible land management practices on a 'per unit' basis, as the economic analysis does, gives a much better idea of the cost of implementing existing laws and water quality standards and prohibitions, if they were complied with, even if such costs are not directly a function of the proposed Action Plan.

General Comments Related to Sediment

General Comment 15 - Effects of Multiple Interacting Human Activities (EMIHAs) (Comment made by 3, 7, 10, 18, 29, 33, 35, 36, 40, 46, 48)

Several commenters question the use of the category Effects of Multiple Interacting Human Activities (EMIHAs) (Sections 3.1.6 and 3.4.3 of Staff Report). The essence of the comments is a contention that if a given delivery of sediment cannot be traced to a specific human action then the sediment delivery should be considered natural. In other words, some commenters contend that all sediment delivery should be considered natural unless it can be proven to be human-caused on a case-by-case basis. This approach is not tenable in a study on a watershed scale.

For example, one comment (TPC-2, p. 10) states as a basic premise: "…sediment sources that cannot be linked to a specific cause-and-effect should not be attributed to land use based only on the fact that land use has occurred above the site." Staff find the literature on cumulative effects, along with observations in the field, sufficiently convincing to reject this argument.

Response to General Comment 15

The long-term effects of disturbance in the landscape are long-lasting and cumulative. A substantial body of literature develops and supports the principles of cumulative watershed effects and discusses the interactions different processes affected in the landscape. The principle and background of this interpretation are presented in Section 3.1.6, where some of the more well-established literature explaining the concept is cited and the some types of long lasting effects are listed – effects that are observed in the Scott. The Scott, with its extremely steep topography and extensive unstable areas, is vulnerable to cumulative effects as repeated entries for road building and timber harvest affect canopy, ground cover, slope angles, and hydrology. Singly and together these changes increase erosion and decrease slope stability. Staff believe it would not be responsible to ignore these effects because each increase in sediment delivery cannot be related to a specific sign of human activity.

Estimation of EMIHAs in the Scott River watershed is presented in section 3.4.3. These estimates are not presented "with certainty" as one comment (TPC2, p. 9) asserts but are proportions estimated to be within 25% ranges, as explained in the text. In response to comments on the Public Review Draft of the Staff Report, staff have revised and expanded Section 3.4.3 to include more information on watersheds upstream of sampled stream reaches (revised Table 3.15) and fuller explanation of methods. Further studies on subwatershed level during implementation and updating of the TMDL will add more detail to interpretation of EMIHAs in local areas.

General Comment 16 – Sediment-Related "Legacy" Issues (Comment made by 10)
One comment referred to "legacy" sediment sources that result from land use practices of previous landowners and argue that present landowners should not be held responsible for these sources. The concern is that current landowners will be hurt financially if they are required to mitigate ongoing sediment discharges that result from past practices which do not relate to current land use or engineering practices. The contention is that landowners should not be held responsible for anthropogenic sediment discharges on their land that they did not initiate, or, in some cases that were created by practices no longer in use.

Response to General Comment 16
Staff are aware of this situation and take it into consideration where possible. However, in the TMDL analysis, the task is not to pinpoint specific responsibilities of specific landowners relating to past practices, but to determine the general nature and origin of existing impairments to a level sufficient to craft a plan for recovery. This level of analysis does not easily lend itself to, nor has the Regional Water Board generally attempted to distinguish between human-caused contribution from current practices and that from past practices, although staff did make this distinction in cases where the relevant information was available.

The task of the TMDL study, specifically, is to estimate the proportion to which human-caused sediment delivery, of whatever age, is producing an increase over natural sediment delivery. By law and precedent, a landowner is generally responsible for human-activity related discharges currently occurring on or from their land, without regard to who and when the original human activity initiated the discharge.

In some cases, mitigating an older "legacy" sediment source (say a localized source) may prove more cost effective in decreasing total human contribution than addressing a source related to current activity that is more widespread. Staff did not want to eliminate the possibility of a discharger getting credit for mitigating an older source just because the cause is not current land management practices.

See also, comment and response to General Comment 5 above.

General Comment 17 – Rain-on-Snow Events (Comment made by 5, 9, 13, 29, 48)
Several commenters singled out rain-on-snow events for comment, feeling that staff had not given these events enough attention with respect to the potential interactions of land

management activities with these events that may result in accelerated sediment delivery, increased peak flows, and other changes to watershed processes.

Response to General Comment 17
Rain-on-snow events are significant in the Scott and are discussed as a significant factor in flooding in Section 1.5.3. The largest floods of record, five floods between 1861 and 1997, all were associated with rain on snow events. These events can produce very large sediment inputs from both runoff and mass wasting, but their timing is not predictable. Thus the best way to minimize damage appears to be to be to minimize the increased vulnerability of the landscape produced by disturbance. The TMDL study is designed to average sediment delivery over an extended period, and in that way the rain-on-snow events are taken into account as part of the long-term ongoing processes of the watershed. In fact, such an event was included in the South Fork road inventory area where rates of road related sediment delivery were estimated.

Reduced canopy and concentrated runoff from roads may well produce increased peak runoff, which includes sheetwash as well as concentrated runoff. The results may be increased sediment delivery, bank erosion and gullying, and increased sediment movement in channels. In the TMDL study, increased peak runoff was not approached as a separate topic but was taken into account in the consideration of current sediment delivery.

General Comment 18 – Landslide Risk (Comment made by 5, 29, 48)
A number of commenters expressed the view that the TMDL analysis should have accounted in a more explicit way for the risk of accelerated sediment delivery as a result of the conduct of inappropriate activities on sensitive portions of the watershed. For example, intensive activities associated with timber harvest have been shown to lead to increased landslide activity given triggering weather events. Commenters recommended that existing tools such as the SHALSTAB model should be used to characterize such risks.

Response to General Comment 18
SHALSTAB, a computer model developed to evaluate risk of shallow landslides, is based upon digital elevation models and information on root strength and other parameters of the substrate. It is useful in defining high-risk areas that can then be managed appropriately. SHALSTAB modeling in the Scott by Derksen (2005) shows as highest risk the areas where the TMDL landslide analysis found the highest incidence of landslides – the mountains along the west side of Scott Valley. In that way SHALSTAB was used as verification. However, the TMDL landslide analysis was done on the basis of documenting what has happened as a tool toward prediction rather than modeling. The results of the inventory agree with the model in defining the highest risk areas, and staff believe that each verifies the other. The SHALSTAB model could be used by timber operators, Regional Board staff, or other agency staff in evaluating Timber Harvest Plans and other planning activities.

General Comment 19 - Wildfire (Comment made by 10, 48)
Some commenters questioned whether the TMDL properly takes into account the effect of wildfires. Questions raised included whether fire was considered a natural or human-caused process and whether an effort was made to attribute individual fires to individual causes.

Response to General Comment 19
Regional Water Board staff chose not to address wildfire as a separate issue. There are several reasons for this, centering on incomplete data and complexity of relationships. To begin with, the GIS coverages of wildfire include only relatively recent fires, and evidence in the field shows signs of fire in many places where the GIS does not show fire.

In addition, human intervention affects wildfires in ways that are complex and not wholly understood. Timber harvest, mining, and agriculture all affect both the frequency and the intensity of fires. Human management of fires has affected the landscape profoundly, and changes in fire management – and the landscape – are continuing. A policy of suppressing all fires for close to a century has been changed in recent years to policies that allow for controlled burns and letting some wild fires burn. As some lands in the Scott have been designated Wilderness, the fire policy in these lands is different from policy in surrounding lands, and it will be many decades before a natural fire regime is reestablished in the Wilderness areas. For the purpose of the TMDL study, wildfire is considered to be a natural process.

General Comment 20 – Appropriateness of Information (Comment made by 29, 36, 42, 48)
Several comments urge consideration of factors that, while important in themselves for various reasons, either are not directly related to the TMDL studies or were not included in the study plans because information was being obtained in other ways. Factors mentioned include rate of land disturbance, seral stages of vegetation, the Pacific Decadal Oscillation, particular remote sensing data, automated image change detection, and others.

Response to General Comment 20
The Sediment TMDL study has included the factors that experience and precedent have shown to be appropriate to establish the presence of pollutant discharges and impairments and to establish allocations. Other information sources may be useful in implementation, as part of a comprehensive watershed restoration plan, or for activities that relate to or overlap with the TMDL, but they were not considered necessary for the TMDL.

General Comments Related to Temperature

General Comment 21 – Using the 1900s as a Baseline (Comment made by 42, 44, 46)
Some commenters felt that the use of photos of riparian conditions in the early 1900s as a basis for potential vegetation conditions is not appropriate. Commenters noted that

changes in hydrology and stream geometry that occurred since the early 1900s make the restoration of early 1900s conditions unattainable.

Response to General Comment 21
The photos from the early 1900s are the best available information indicating the distribution and density of riparian tree species in Scott Valley prior to extensive human-caused changes. The conditions depicted in the historical photos were used to develop a reasonable depiction of riparian species distribution and characteristics, and were not used to develop a depiction of channel geometry for the TMDL. It is true that reduced water table elevations and simplification of the Scott River channel are likely to pose significant challenges in some areas. However, Regional Water Board staff believe the challenges are not insurmountable. If further study determines that mature riparian vegetation is not sustainable, that sustaining mature riparian vegetation requires other actions such as channel modification to be successful, or that shade values predicted for potential vegetation conditions are overestimated, such information can be used to update the TMDL.

General Comment 22 – Evapotranspiration (Comment made by 10, 46)
Commenters suggested that the goal of maintaining and protecting mature trees in the riparian areas of Scott Valley will result in reduced flows due to increased evapotranspiration. The reduced flows affect both stream temperatures and salmonid habitat.

Response to General Comment 22
It is clear that mature riparian trees transpire water, and that the TMDL implementation scenario anticipates much more mature trees in Scott Valley. However, the presence of mature riparian trees and riparian grasses, rushes, and sedges has also been shown to increase water storage in areas where natural riparian vegetation has been restored, leading to increases in summer discharges. Regardless, mature riparian vegetation and cold water aquatic species co-existed historically. In addition, it is unlikely that mature riparian areas will transpire volumes in the range of the 50,000-70,000 acre-feet currently used for irrigation. The transpiration of water by riparian trees species will be evaluated in the study of groundwater/surface water interaction, as described in Section 5.1.8.2.

INDIVIDUAL COMMENTS AND RESPONSES

1. Arcata Public Workshop

Comments by Richard Gienger:

Comment ARC-1:

"Some closer adherence to the Garcia model would be more beneficial than the current approach. With the Garcia model, landowners can say that they're not discharging, or they can comply with standards set out by the Regional Board, or they can do their own independent plan."

Response:

See Response to General Comment 1. Given the different setting in the Scott watershed, and the level of projects directed at stream restoration and salmonid recovery, Regional Board staff felt that building on these efforts has the best chance of producing near-term results.

Comment ARC-2:

"Seems like the weight of monitoring falls with the Regional Board. This needs to be transferred to the project proponents, not just with the Scott, but also in general. There should be a basic tracking process for projects that threaten discharge. Whether it's photo-points or measurements, they need to take the responsibility themselves."

Response:

See Response to General Comment 10. The Regional Board anticipates that responsible parties, the Regional Board, and other entities would all have a role in monitoring.

Comment ARC-3:

"Recovery is supposed to be the goal and given that, as a practical basis, you shouldn't limit yourselves to anthropogenic sources. Corrective measures need to take on discrete streamside features big and small wherever is possible. You might be able to get more recovery by taking on natural sources than some anthropogenic ones. Since the cause is difficult to determine, you need to deal with problems as they exist."

Response:

It is expected that these issues would be addressed at a site-specific or ownership level as part of inventory and prioritization of sediment delivery sites. At the same time, it is the Regional Board's responsibility to address discharges of waste associated with human activities.

Comment ARC-4:

"You need to consider water conservation. In the Mattole, there is a commitment from people not to draw water from streams during the summer low flow period. There's an

effort to enable people to get holding facilities to get water during the high flow times to use it during the low flow times."

Response:
See Response to General Comment 6.

Comment ARC-5:
"I don't see the requirement to reduce human sources by 63% as an integral part of the TMDL in the Action Plan. You're too ginger on the responsibilities and requirements that people need to take."

Response:
It is expected that successful implementation of the primary actions called for in the Action Plan with follow-up regulatory and enforcement actions as needed will lead to meeting the TMDL loading capacity for sediment in the Scott watershed.

Comments by Eli Asarian:
Comment ARC-6:
"Scientific transparency is fundamental; it's common sense. This conclusion was reached by an Independent Science Review Panel that the Board appointed several years ago to study Pacific Lumber Company land management."

Response:
See Response to General Comment 8.

Comment ARC-7:
"The TMDL should have done a better job at utilizing all available data. The Dunne Report looked at assessing land use and they recommend GIS data. The TMDL didn't characterize vegetation size across a watershed and what that means for habitat and stream conditions. Also satellite data shows changes in canopy and that should be used. There was no mapping of timber harvest on private lands prior to 1991 even though they could be causing problems. There was no information of where coho are living in the basin, and this is available from studies conducted by the RCD and the Watershed Council. This information should be used to prioritize the watershed for restoration."

Response:
Comment cites data that is available but was not part of the TMDL study. Vegetation size is not directly linked to sediment delivery. The SHALSTAB model is a predictive model for landslide risk; the TMDL study evaluated past delivery as a guide to future problems rather than trying to model future risk. See response to General Comment 12 regarding prioritization.

Comment ARC-8:

"Quantifying land use activities is critical because even if the practices across the landscape are of the highest quality, the amount occurring can overwhelm the quality. We're recommending quantitative limits on how much area can be harvested and on road densities. There has been an increase in peak flows from watershed disturbance."

Response:
Several comments, including ARC-8, refer to increased peak flows as the result of removal of canopy. This may well be a source of increased sediment, but the effects were taken into account in the process of estimating sediment delivery from observations on the ground. Site-specific studies during implementation may make more use of canopy data.

Comment ARC-9:
"The TMDL doesn't properly recognize that the air temperature in the stream is the most important thing, not shade. If you leave one row of trees standing along a stream, you will still have shade but you're not going to maintain microclimate above the stream. Flow depletion can cause water quality problems."

Response:
Regional Water Board staff encourage all stakeholders to review the findings of the State of Oregon Independent Multidisciplinary Science Team's report titled *Influences of Human Activity on Stream Temperatures and Existence of Cold-Water Fish in Streams with Elevated Temperature: Report of a Workshop* (2000), as well as the Summary Report of the CMER/RSAG Temperature Workshops (2001), developed for the Washington Department of Fish and Wildlife. Both reports summarize the state of knowledge in regard to stream temperature influences in forested stream settings, and were developed by interdisciplinary groups drawn from academic, regulatory, and commercial forestry backgrounds. The findings in these two reports are consistent with the conclusions of the temperature source analysis presented in the staff report. The temperature analysis recognizes the potential for changes in both flow and microclimate to affect stream temperatures.

Comment ARC-10:
"We have enough data now that there is a problem with groundwater extraction in the Scott River; there have been a number of wells drilled since the 1970's. The minimum flows in the river appear to be decreasing over time as well as the minimum annual groundwater levels. The groundwater study in the Action Plan is still important because it will provide more information about the effect of adding or shutting down wells. The study needs to be open to be trustable, and it needs to be followed with action. Over time, the annual maximum groundwater levels in the springtime seem to be stable but the annual minimum is decreasing in the late summer/early fall. This is a quick analysis, but there is some data. The number of low flow days per year is increasing. Some is due to natural drought cycles but also can be connected to a change in crop production from alfalfa to wheat."

Response:
See Response to General Comment 6.

Comment ARC-11:
"The Pacific Decadal Oscillation is a 25-year cycle where conditions shift from good to bad and back as far as conditions for salmon in the ocean and on land. In 1995, we entered a good condition and in 2015 it's going to be flipping back in the other direction. We should keep this in mind when talking implementation because we only have 10 years before this happens."

Response:
The Scott TMDLs and Action Plan do recognize the urgency in salmon recovery. The time schedules proposed in the Action Plan are sufficient to make major progress by the year 2015-2020. However, some implementation will take longer to fully realize such as restoring full shade potential along streams that are presently devoid of trees.

Comment ARC-12:
"Implementation should be prioritized following the Bradbury report, the areas for coho should have priority. It's unfortunate there is no strong implementation plan to link to in the Scott as there was in the Salmon where the TMDL said we're going to follow the Salmon River Restoration Plan. The Strategic Action Plan, the Take Permit or the Coho Recovery plan are not going to suffice because they are too voluntary to achieve what needs to be done."

Response:
See Response to General Comment 12.

Comments by Ben Riggan:
Comment ARC-13:
"This isn't a particularly enforceable plan. There's no assurance that the goals will be met."

Response:
See Response to General Comment 1

Comment ARC-14:
"There's tribal trust responsibilities that haven't been met.
Is this plan going to meet requirements by the state to meet these obligations? The tribes haven't had a level playing field in asserting their rights to maintenance of tribal trust resources."

Response:
The TMDL development process has involved regular coordination with the tribes and USEPA, who are responsible for tribal trust on Clean Water Act issues. These activities are described in Chapter 11 of the Staff Report.

Comments by Vivian Helliwell:
Comment ARC-15:
"The Scott TMDL needs to address decreasing flows relative to high temperature pollution."

Response:
See Response to General Comment 6.

Comment ARC-16:
"Rate of land disturbance should be addressed and the Board of Forestry ITP rules are sun-setting."

Response:
See Response to General Comment 9.

Comment ARC-17:
"Also prioritizing restoring refugia is important."

Response:
See Response to General Comment 12.

Comment ARC-18:
"Please include schedules in order to comply with Antidegradation and the Basin Plan."

Response:
See Response to General Comment 1.

Comment ARC-19:
"We need transparent data. Fishing dependent communities have a huge stake in the water quality of the Scott River."

Response:
See Response to General Comment 8.

Comments by Tim McKay:

Comment ARC-20:
"It's important for the Shasta and other TMDLs that you go to the communities on the Coast because that's where the effects come home to roost."

Response:
See Response to General Comment 3.

Comments by Felice Pace:
Comment ARC-21:
"Unless we have required road maintenance and a prohibition on wet-weather hauling, we are not going to have reduced sediment production on forest roads. I don't see that in the Action Plan."

Response:
The USFS has a best management practice that addresses operating seasons for active timber sales, as well as a USFS maintenance requirement for system roads outside active timber sales. Additionally, the USFS implements a set of wet weather guidelines restricting activities, including hauling, when road conditions become too wet. Also see response to **EPIC-4**.

On private lands where the California Forest Practice Rules apply, the Threatened and Impaired (T&I) Rules (14 CCR § 916.9, 936.9, 956.9) require a three (3) year road maintenance period. These rules also contain restrictions on wet weather operations, including road use and construction. There has been concern expressed about the sunset provisions in the T&I rules. Language has been added to the Basin Plan language to account for this possibility.

Comment ARC-22:
"There are hundreds of studies showing decreased base flows and increased flood flows with increased levels of disturbance. There's the De La Fuente study after the '97 storm, which on empirical data, showed a 50 to 100 times increase in landsliding, and you have not adequately addressed landsliding, and I'll be happy to take you out in the Scott and show you plenty of them and tell you the history of when they cut and when the landslide occurred."

Response:
Concerning decreased base flows and increased flood flows with increasing disturbance, these effects are well documented in many places, and their effects are shown in the condition along the streams surveyed. These effects are taken into account in the category of Effects of Multiple Interacting Human Activities (EMIHAs) that is included in the TMDL calculation.

Concerning landslides, the TMDL study took the approach of evaluating processes and features that can be observed in the landscape rather than relying on predictive tools. The landslide analysis inventoried the entire watershed.

Comment ARC-23:
"Decade by decade the flows are going down, and right now, for four months, we're not meeting the (adjudicated instream) flows. There are low flow barriers that prevent chinook salmon from getting to the Scott Valley. That's the best science we have, we'll never have it completely down. So the need for more studies is a cop-out. The best science we have is the USGS report and the Water Resources report from 1975."

Response 2: Regional Water Board staff recognize a change in low flows coinciding with a time period of irrigation well development. Staff also recognize that others suggest that the removal of a diversion dam in the early 1980s contributes to the decrease in low flows. However, without better information, the relative roles of factors such as those mentioned cannot be evaluated. Regional Water Board staff recognize the interconnected nature of surface water and groundwater in Scott Valley. Regional Water Board staff disagree with the commentor regarding the need for a groundwater study. See also response to General Comment 6.

Comment ARC-24:
"Here's peer reviewed science, Dan Drake, Ken Tate, and Harry Carlson, they're UC extension agents. They used rainfall and flow data and did sensitivity analysis. Nearly 80% of the variation of September flows is described by the content in spring snowpack, July rainfall, August rainfall, total rainfall for the previous 12 months. "From our analysis, fall flows have tended to lower because of a downward trend in water content of snow." They conclude and this analysis was called 'Analysis Shows Climate Caused Decrease in Scott River Flows.' This was specifically done to combat the CRMP and our plan to increase fall flows. The point is that 80% of the flow is explained by precipitation. But what about the other 20%? What explains this? There's two things, changes in consumptive use of water or changes in the upslope, I would say the first is more significant."

Response:
The Regional Board recognizes the potential of consumptive use to reduce stream flows. However, the investigation of the connection between forest management and base flows was beyond the scope of the TMDL analysis.

Comment ARC-25:
"This one is DWR provided by Bill Bennett, based on work by Ken Turner and this contradicts some of the data you had because it has consumptive use in 1954 at 48,300 acre feet, and in 1991 it's got consumptive use at 71,100. Bill Bennett cited 60,000 for today, but here he has 71,000 in 1991 and I can show you the wells that have been added since that time and the land that's been brought under irrigation since that time."

Response:
Comment noted.

Comment ARC-26:
"There is no connection between what gets approved for funding by the RCD and what's in the SAP. There's a disconnect there. The SAP cannot be relied upon to clean up the Scott River. Siskiyou County, the supervisors, are going to refuse to do a grading ordinance, timber doesn't want it and ag doesn't want it, so they're not going to do it. There's not going to be a groundwater study because it might lead to a cessation of irrigation pumping."

Response:
All Action Plan measures are backstopped with a date. If voluntary measures such as those mentioned are not implemented by this date, the Regional Board will take further action to address the impairment of beneficial uses. See also Response to General Comment 1.

Comments by Michele Marta:
Comment ARC-28:
"Clearly self-regulation has not worked. Make an enforceable action plan where the true cost of logging and farming is taken into consideration in your regulations and your permits."

Response:
See Response to General Comment 1.

Comments by Scott Greacen:
Comment ARC-29:
"Your projections about the Forest Service's ability to comply with the plan are at best extremely optimistic. The expectation that the Forest Service is going to be able to meet these standards on a voluntary basis, especially given the kind of changes that we've seen over the last five years, it's wishful thinking. It's not going to happen."

Response:
These issues would be addressed during development of an MOU with the Forest Service. If an acceptable MOU cannot be established in a timely fashion, then regulatory permitting mechanisms will have to be explored.

Comments by Mark Lovelace:
Comment ARC-30:

"Evaluate the stakeholders and make sure that no more than half of them are potential dischargers. If you don't have people coming voluntarily to the table, you need to reach out to them, there needs to be balance."

Response:
See Response to General Comment 3.

Comment ARC-31:
"Stop encouraging and start requiring compliance, if it is voluntary and punishable, you can be sure people will not be jumping at the opportunity."

Response:
See Response to General Comment 1

Comment ARC-32:
"Make sure all data is public and transparent and can be independently verified and reviewed so we can have faith in the process, and we can have a reliable result."

Response:
See Response to General Comment 8.

Comments by Denver Nelson:
Comment ARC-33:
"They weren't repeated in this, so what you have in this TMDL is roads being the cause, but you'll never be able to reproduce these statistics when you reevaluate whether your mitigations have made any difference when you redo this 10 years from now. I'd like to see a statistician to instead of saying this road produces sediment and therefore we should fix the road, to analyze the entire Scott Valley for where the sediment is coming from and then you will be able to do whatever mitigation you want, and then 10 years from now you'll be able to repeat that study and see if it did any good. If you use your current data, all you'll be able to say is that you've removed so many miles of road. So I think it's a fundamental thing to have reproducible results."

Response:
The comment begins with the premise that the Van Duzen sediment TMDL, with which the commenter was involved, is the "gold standard" for sediment TMDLs. As watersheds differ in area and in many aspects of topography, hydrology, land use, resources, and history, we question whether one single method is appropriate for all. The sediment revealed by the plot method of assessment used in the Van Duzen is accounted for in the EMIHA approach in the Scott, where access to large areas of land was restricted. Staff do not agree with the commenter's assertion that results in the Scott are not reproducible.

2. California Department of Transportation (CDOT)

Comment CDOT-1:
"The Department uses a variety of design, construction and maintenance BMPs to control sediment and erosion on both Routes 3 and 96, which were identified in the Draft TMDL Report"… "During maintenance, the Department inspects all drainage, and when necessary cleans and investigates sources of sediment."

Response:
Regional Water Board staff appreciates this information and commends the Department for taking these proactive actions to reduce sediment impacts to watercourses.

Comment CDOT-2: "The Department also developed a program to inspect along roadsides to determine any need for remedial measures… The Department records there programmatic inspections and findings in the Annual Report."

Response:
See response to CDOT-1.

3. California Forestry Association (CFA)

Comment CFA-1:
"By conveniently ignoring earlier photographs that depicted a much different picture of the Scott River – a picture that would imply the historical water temperature was much warmer - the Regional Board attempts to meet its pre-determined objective. CFA contends that the photo modeling used by the Regional Board does not consider the natural variances and background of the Scott River, is fundamentally flawed and should not be adopted."

Response:
It is not clear what photographs the commenter refers to. If they exist, Regional Water Board staff are not aware of them. The historical photos were used to identify the types of tree species that were present along the Scott River prior to their disappearance.

Comment CFA-2:
"The responses of the Regional Board's staff member (see comment CFA-1) is clear evidence that a thorough evaluation of past conditions was not undertaken before setting objectives that are unscientific and unattainable by the regulated community."

Response:
Regional Water board staff disagree. A thorough evaluation was conducted of all available information regarding past and present conditions. Regardless, the TMDL can be modified if new information suggests that it is appropriate.

Comment CFA-3:
Quoting Dr. John Menke: "Only after getting a copy of the graduate student's dissertation did I learn that the model being used to characterize stream shade was too weak to do the job needing to be done."

Response:
Regional Water Board staff disagree. Furthermore, the RipTopo model presented the best available approach to assessing current and potential conditions at a watershed scale. Dr. Menke has not suggested an alternate approach.

Comment CFA-4:
Quoting Dr. John Menke: "[i]n the case of the work by the U.C. Davis graduate student on forest stream shade modeling, he reported incorrectly the resolution of the satellite imagery by 100-fold giving the impression that the imagery resolution was adequate to detect riparian conditions. This error was never acknowledged in a TAG meeting nor in response to my written questions."

Response:
Drs. Schilling and Viers addressed this issue in a letter to Dr. Menke dated July 1, 2005 with the following:

"The stated minimum mapping unit for CALVEG is 2.5 acres (~1 hectare or 100m x 100m raster unit of analysis); however, these data are interpreted from LANDSAT TM at a nominal ground cell resolution of 30m. Furthermore, as stated in the metadata provided by the California Department of Forestry and Fire Protection, these data were created because: "Vegetation data consistent across all ownerships is critical for assessing current conditions, monitoring changes over time, and determining management options."

While it is true that the CALVEG data were re-sampled to match the dimensionality of the primary RipTopo input, a United States Geological Survey Digital Elevation Model at 10m raster resolution, this is not without precedent. Indeed many studies have combined coarse vegetation data within a GIS-enabled analysis to draw inferences at finer scales. We suggest reading Loft, Kie, and Menke (1993; California Fish and Game 79:4) for an example. More recent examples include Jha et al. (2005; Biodiversity and Conservation 14(7):1681-1698), Periman (2005; Geoarchaeology 20(2):193-210), and Meentemeyer et al. (2004; Forest Ecology and Management 200(1-3):195-214)."

Comment CFA-5:
"Based on the Regional Board staff's own admissions and Dr. Menke's expert observations, CFA has serious concerns about the scientific integrity of the models. We respectfully request that the stream shade model subcontract work, performed by UCD,

as well as the sediment assessment methodology discussed below, be peer-reviewed by an independent group of experts before implementation of the Action Plan."

Response:
The science that was used to define the TMDL has been peer reviewed by two separate reviewers as part of the Basin Plan Amendment process. Dr. Douglas Piirto and Dr. Don Erman were the scientific peer reviewers and they submitted their reviews on August 10, 2005 and July 25, 2005 respectively. Once the reviews are submitted to the Regional Board, they become part of the public record. Peer review comments and staff responses are included as a new appendix to the Staff Report. The Action Plan is not subject to peer review because it is a matter of policy for consideration by the Regional Board. In addition to the above-noted peer review of the science, the Action Plan and the Staff Report were presented at three public workshops at which the Regional Board staff explained the elements of these documents and this public comment opportunity was presented. Together, these actions fully satisfy the requirements for both peer and public review as set out in State law governing Basin Planning procedures for the adoption of science-based Basin Plan amendments.

Comment CFA-6, CFA-7, CFA-8:
"In the Scott River Watershed the direct sources of sediment related to timber management is insignificant compared to natural levels. According to the guidelines for the preparation of erosion control plans, the reduction of these amounts is immeasurable (1 cubic yard). As a result, the cost of "voluntary" efforts by timber landowners will far exceed the value received in water quality improvement.

Moreover, the source of sediment that could not be directly linked to land management activities (Large and Small Discrete Streamside Features) is erroneously attributed to multiple interacting human activities ("MIHA"). Sediment rates in areas that have little or no management show erosion rates equal or even above areas with management. This fact invalidates the assumption of MIHA that some portion of the sediment in managed sections of the watershed should be attributed to land management. The data do not support the assumption that timber management contributes to these instream, non-linked sediment sources.

When the MIHA categories of sediment are placed in the "Natural" sources of sediment, the total percentage of sediment over background levels is only 17 percent (all sediment sources) and 15 percent for timber related sources. This is less than what other TMDLs have determined to be a significant impact and therefore, no additional efforts by landowners should be required to achieve the Action Plan's objectives."

Response:
See Response to General Comment 15. See also responses to Timber Products comment TPC2-3 and related comments.

Comment CFA-9:
"The proposed Action Plan does not contain evidence demonstrating that the Regional Board took the factors spelled out in the Water Code into consideration when developing the sediment objective. As a result, there will likely be a ratcheting up of existing water quality regulations, which will force timber landowners to incur significant costs when there is an absence of evidence that there will be demonstrable improvement in water quality."

Response:
See Response to General Comment 9.

Comment CFA-10:
"Current Forest Practice Rules are sufficient to protect water quality without imposing greater regulatory constraints and unnecessary costs on CFA members. Although the Regional Board has assured forest landowners that the proposed Action Plan will not result in additional regulations, in fact, it is likely that current regulations of timber harvesting activities in the North Coast Region will become more stringent to meet the unachievable objectives set in the Plan."

Response:
See Response to General Comment 9.

Comments CFA-11, 12, 13:
"Examples of implementation strategies that are duplicative of current Rules include:

- An erosion control plan for discharges or threatened discharges of sediment due to roads related to timber harvesting activities in the section titled *Road and Sediment Waste Discharge Implementation Actions for Individual Responsible Parties*. The BOF has already addressed road related sediment and erosion control in numerous rules.
- Under the *Implementation Actions to Address Water Temperature and Vegetation that Provides Shade to a Water Body* section, the proposed Action Plan calls for "minimizing the removal of vegetation that provides shade to a water body, and minimizing activities that might suppress the growth of new or existing vegetation." This is of particular concern as it may lead to unauthorized rate of harvest limitations on our members seeking waivers for WDRs.

Included in the *Timber Harvest Implementation Actions* is the suggestion that "[I]n order to prevent, minimize, and control sediment waste discharges and elevated water temperatures from timber harvest activities on private and public lands in the Scott River watershed, the Regional Water Board shall continue to use WDRs, general WDRs, and waiver of WDRs to **regulate timber harvest activities**." (Emphasis added). This statement is evidence of the likely ratcheting up of current water quality requirements on timber harvesting activities and ignores the fact that only the BOF may regulate timber harvest activities."

Response:
Comment acknowledged. The commenter is correct that the Regional Water Board does not regulate specific land use activities in and of themselves: it regulates discharges caused by those activities. The nature of land-use related nonpoint source discharges is such, however, that the specific type of land use activity, its scale, intensity, methods, and practices are tightly related to the resulting level and type of discharges. Both discharge source identification as well as plans for reduction of such discharges must therefore often necessarily be tightly calibrated to the specific land use activity, such as timber harvest activities. See also Response to General Comment 9.

Comment CFA-14:
"CFA recommends that the Regional Board review carefully any implementation of the proposed Action Plan to ensure that it is consistent with existing regulatory requirements, found in the Rules, associated with forestry activities in the Scott Valley Watershed."

Response:
The Regional Board is not proposing any new regulation on timber harvest activities in the Region. The Action Plan is fully consistent with existing regulatory requirements. The Regional Board will not implement any programs that are unnecessary and/or duplicative. See also Response to General Comment 9.

Comment CFA-15:
"Delay approving an Implementation Plan until the technical TMDL is accurate enough to direct improvements and corrective actions;
Delay approving the Implementation Plan until the specific guidelines for erosion control plans and other regulatory programs are developed"

Response:
The 45-day public comment period began on September 20, 2005 and ended on November 3, 2005. The Scott River TMDL is included in a consent decree entered into by U.S. EPA whose associated schedule requires the Regional Board to adopt the Scott TMDL by the end of 2005, and prolonging the process will not allow the TMDL to be adopted by that date.
However, the Board recognizes that adjustments may be needed in the future based on practical experience, and the Action Plan was purposely crafted to allow for adaptive management. The Regional Board is committed to working with stakeholders and sovereign governments in the Scott Valley and the Klamath Basin to implement an Action Plan that is responsive to local conditions. The Board recognizes that local information is important to the implementation process and will take that into consideration as it follows through with the provisions of the Action Plan. The effectiveness of the Action Plan will be reassessed in the future and is subject to change based on the findings of those assessments. Reassessment of the Action Plan is addressed in the Action Plan under Section VII 'Reassessment'.

More fundamentally, the Regional Board believes that the technical TMDL is accurate enough for the purposes of defining the problem, identifying the linkage between sources and impairments at a planning level, and establishing load allocations that form the basis for an implementation strategy. The current impairments are the result of a number of interacting factors. Modeling these system dynamics with 100% accuracy is not possible due to the complexity of this interaction. However, the load allocations and identifications need only meet a minimum threshold for accuracy to serve as an adequate basis for implementation. The Regional Board believes that this threshold has been met and even surpassed with the level of data collection and analysis performed for this TMDL. The US EPA will be the agency to finally approve the technical TMDL and will assess the level of accuracy of the scientific component. Initial comments from the EPA indicate that the technical analysis goes above and beyond what is needed to establish the TMDL.

Any greater scientific certainty that might be gained by delayed adoption of the Action Plan would not fundamentally change the nature of the Action Plan as recommended: that is, 1) to build on existing voluntary efforts, and 2) enforce and implement existing water quality standards using existing authorities where necessary, combining these two strategies together to begin to immediately ratchet down the impairing pollutants in this watershed. The Regional Water Board could decide to use existing authorities to proceed directly to a permitting and enforcement approach to restore beneficial uses without the adoption of the Action Plan, but that would neither comply with existing TMDL obligations, nor be the more methodic, informed and cooperative path.

With regards to the accuracy of the implementation plan, please see response to General Comments 2 and 3. The implementation plan was intentionally left open-ended to allow for adaptive management.

Comment CFA-16:
"Adoption of a TMDL implementation strategy that certifies that existing regulatory programs are being implemented and additional programs are unnecessarily duplicative and expensive."

Response:
The Regional Board is not proposing any new regulation on timber harvest activities in the Region. The Action Plan is fully consistent with existing regulatory requirements. The Regional Board will not implement any programs that are unnecessary and/or duplicative.

4. Californians for Alternatives to Toxics (CAT)

Comment CAT-1:
"We uphold our previous concerns and reiterate our recommendations for the prohibited use of pesticides on projects that are not capable of preventing sediment discharges."

Response:
The TMDL for sediment does not address pesticides.

5. Coast Action Group (CAG)

Comment CAG-1:
"The proposed Implementation/Action Plan is not an enforceable document. Nor, is there a remote chance that the proposed actions, without enforceable language, will ever meet WQS."

Response:
See Response to General Comment 1.

Comment CAG-2:
"The Implementation /Action Plan lacks linkage and consideration with what is, or should be, the matrix of near-stream and in-stream desired conditions - or - linkage and explanation of how such voluntary actions will, or are capable, of attaining these near-stream and in-stream desired conditions or Water Quality Standards."

Response:
It is expected that successful implementation of the primary actions called for in the Action Plan or of follow-up actions if needed will lead to meeting the TMDL loading capacities in the Scott watershed, and that meeting the loading capacities will lead to meeting water quality objectives for both sediment and temperature. See also response to General Comment 1.

Comment CAG-3:
"Missing Factors: Rain on Snow events - historic and potential effects of these large scale events on sediment delivery and stream morphology"

Response:
See Response to General Comment 17.

Comment CAG-4:
"Missing Factors: Low Flow and Water Use - Ground water use and the integration of diminished instream flow in combination with current pollutant, sediment and temperature regimes

Response:

The discussion of the effects of low flows on stream temperatures is presented in Chapter 4 of the Staff Report. Background information describing historic low flows is presented in Chapter 1.

Comment CAG-5, 7, 8:
"Comprehensive Timber Harvest Review - History of current Timber Harvest, related sources from operations, level of disturbance, assessment of current regulatory structure and effectiveness."

"Data indicates that stream banks may not be optimally vegetated with tree and shrub species and, as a result, banks may not be adequately protected from stream erosion **(**assessment should include estimate or % lacking this attribute)."

"Land Use History - It would be of use in problem assessment to have land use analysis - to be accomplished by planning watershed. Land use tables and analysis (by planning watershed) or Disturbance Index - including: tables showing ownership, % of activity per watershed assessment area, type of silvicultural prescriptions applied, area logged by tractor, area logged by cable, area logged by helicopter, and road density. An assessment of land use disturbance should be a basis for linkage and development of implementation strategy and is a essential part of analysis needed in the use of source, linkage, and % pollutant reduction analysis necessary for this TMDL document. If included they would be effective in showing the levels of disruptive activity and relationship with the deteriorated instream conditions. High disturbance levels are indicated as well as intense roading of the watershed assessment areas."

Response:
The history of timber harvest is relevant, but not a necessary component of the problem statement, in this case. A comprehensive review of land use history and activities would be appropriate in some contexts. The objective of the Sediment TMDL study, however, is to characterize the current and recent sediment delivery to the stream system. For that reason, emphasis was put on the sampling program rather than on a detailed review of land use, which is one stage removed from the actual delivery. Timber harvest and other land use was considered in estimating effects of multiple interacting human activities.

Comment CAG-6:
"The Regional Board should summarize existing information in the Strategy which provides a general understanding of the watershed and condition of the fishery noting that historic populations of coho salmon, chinook salmon, and steelhead trout are greatly reduced as are habitat conditions in almost all tributaries due to excessive sediment loading in combination with low flows and elevated temperatures."

Response:
The TMDL staff report addresses these issues in *Chapter 2 Problem Statement.* The TMDL staff report only goes far enough to establish a linkage between the increased

sediment and water temperatures and the impairment of beneficial uses. An exhaustive account of the history of the Scott River watershed is not needed for this document.

Comment CAG-9:
"Not included in the analysis are figures on road density as well as the level of frequency and density of skid trails - a major erosional component."

Response:
Road density appears in Tables 3.3 and 3.4. The study was designed to account for delivery from skid trails where sediment enters the stream system on sampled reaches.

Comments CAG-10, 11, 12, 13:
"Source analysis methodology, including SEDMODEL 2, are not completely adjusted to include full assessment all sediment sources. The methodology included interpretation of aerial photos, small streamside inventory by use of transects (60+ sites) and random sampling, with extrapolation to potentially include sources that are likely to be overlooked. Due to the potential to miss small landslide features, diversion and erosion potential by skid trail disruption, some fluvial and sheet runoff features, and the impact of rain on snow events, I would estimate that the total Load Allocation to be underestimated at least 30% at best and probably more."

"The analysis is should be based on three methods of comparing existing and desired conditions for the watershed:

- Comparison of average sediment loading rates per square mile in highly impacted and relatively unimpaired basins in the North Coast Region, and applying these comparisons in the Scott River setting,
- Qualitative analysis of the linkage between sources and instream conditions, and

Comparison of existing and historical conditions with target levels for the instream indicators selected in the numeric targets section."

"Given the probable underestimate in the sediment budget, mass wasting, surface erosion, fluvial erosion from harvest sites are not given their appropriate allocation and responsibility for recent sedimentation in the Scott River. The linkages with current intense harvest activity would suggest greater allocation in these areas. Monitoring of parameters should be put in place to establish trends and relationships in these areas."

"Conservative assumptions have **not** been made in each case as a way of addressing the uncertainty and areas that are underestimated associated with the data."

Response:
The possibility for error exists in estimating both natural and human-caused sedimentation on a basin-wide basis. Considerably more will be learned at local and site levels during the implementation phase. The important thing at this time is that the evidence shows that there is an impairment, and measures must continue to address this

impairment. Staff believe that sufficient safety margin is included to meet the intent of the regulations, and the TMDL does call for mitigation. What this comment suggests would be more resource- and time-intensive than was possible, or necessary, in the TMDL study of the entire Scott watershed. The greater level of detail the comment calls for may be possible and appropriate in some more limited areas during implementation.

Comment CAG-14 and CAG-17:
"Overwintering habitat is another factor missing in the existing conditions matrix. This factor is linked with less than optimal conditions related to deep holes, LWD, and stream thalweg, noted in the assessment document. This linkage with a demonstrated shortage of deep holes and of Large Woody Debris needs further discussion integration into the policy matrix. The absence of LWD is also reflected in sediment storage and sorting problems related to instream conditions. Absence of LWD is a function of near stream management policy (especially in areas subject to timber harvest) which should be discussed in more depth in the document (it is discussed - below). This is true for several instream functions. Lack of overwintering habitat is and should be a factor in habitat assessment affected by excessive sediment load. There should be more adequate description and discussion of this factor included in the TMDL."

"Discussion above notes the absence and relationship to habitat needs. Policy for increase levels of LWD must be developed."

Response:
Chapter 2 addresses instream indicators, including pool frequency and depths and LWD, which the comment links to overwintering habitat.

Comment CAG-15:
"Discussion of culvert installation and sizing should be included in the problems statement and targets sections."

Response:
Regional Water Board staff understand that the USFS has a 100-year storm flow requirement for new culverts installations. Likewise, the Forest Practice Rules require new or replacement culverts to pass the 100-year storm flow event.

Comment CAG-16:
"The Targets matrix, some listed below and/or considered in Table 2.2, should be manifest as the existing matrix (not just four listed indicators). The complete and expanded Targets matrix should be linked to enforceable policy standards."

Response:
Staff believe that desired conditions presented in Chapter 2 are enumerated and described in a way that is appropriate for the Sediment TMDL. See also response to CAG-14. The

text of Chapter 6 has been modified to better link the indicators discussed in Chapter 2 to parameters to be monitored.

Comment CAG-18:
"Hillslope Targets represent goals for managing problematic conditions and are essential for achievement of the appropriate Water Quality Standards. Hillslope Targets matrix, some listed below and/or considered in Table 2.4 should be manifest in the TMDL Implementation/Action Plan and linked to enforceable policy standards."

Response:
The TMDL includes a monitoring element. Language has been added to Chapter 6 linking the sediment indicators, including the hillslope indicators, and desired conditions to the parameters to be monitored. It is the expectation of Regional Board staff that these indicators would form a key part of monitoring programs developed by the Board or required by the Board of responsible parties.

Comment CAG-19:
"Road maintenance and construction technique (or lack thereof) can be correlated with sediment production and potential for sediment production. Targets and/or any program to help in this area is appropriate."

Response:
See response to ARC-21.

Comment CAG-20:
"Fish Food Production Areas, and macroinvertibrate discussion is directly linked with near stream food/canopy characteristics and forested near stream desired conditions. Discussion should be present considering these attributes."

Response:
As near-stream habitat, temperature, and sediment conditions improve, the instream habitat for macroinvertebrates will improve. It is not necessary or appropriate to detail these habitat factors in the TMDL study. See also response to CAG-14.

Comment CAG-21:
"Suspended sediment is noted as a limiting factor in many stages of the growth cycle of salmonids and is discussed as same in many scientific documents. This element should be an enforceable part of the targets and implementation strategy."

Response:
The TMDL Action Plan targets suspended sediment. The Basin Plan contains an existing numeric water quality objective for turbidity (see Table 2.1). The measures in the Action

Plan are intended to reduce human-caused sediment loading in the Scott River Watershed. See also Response to General Comment 1.

Comment CAG-22:
"It is known that there is a relationship, but the exact nature (ratio of use to instream flow) of the relationship remains to be determined. Impacts of sediment buildup on stream flow must be analyzed /assessed, with linkage to both temperature impairment and salmonid habitat conditions, to develop comprehensive pollutant loading analysis and implementation strategy."

Response:
The interaction of sediment and stream flows is something that should be considered once water use impacts on stream flows are evaluated in the groundwater study.

Comment CAG-23:
"The Temperature analysis should consider the best science available for flow and riparian assessment. Studies by Bartholow, Essig, Poole, and Berman should be referenced in terms of impacts of microclimate and overstory on stream temperature. These studies indicate that air temperature to and near stream microclimate to be major factor in determining instream water temperature. FEMAT suggests that the zone of riparian influence is two site potential trees - where buffering, in the form of cool air temperatures and high humidity over the stream, deteriorates rapidly under one site potential tree height protection.

Response:
See response to QVIC-51.

Comment CAG-24:
"Most of the monitoring data and analysis presented indicating existing temperature regimes (in MWAT) far in excess of conditions suitable for salmonids in various life stages. A matrix of acceptable Targets should be developed for reaches of the watershed indication the acceptable MWAT range and percent of habit that should fall into that range. A Target of 16.7 C (absence line for coho) is a logical goal. It should be determined what percentage of the watershed should meet this target to address beneficial use issue."

Targets should also be developed for other factors that influence elevated temperature loading (i.e. Percent shaded area appropriate for forested areas, percent shaded area appropriate for non-forested areas, minimum or acceptable low flow targets for various reaches of the drainage, etc.). These Targets should be the basis for the development of enforceable implementation policy."

Response:

The matrix the commenter suggests would require all streams be modeled for potential conditions, which is far beyond the scope of this analysis and unnecessary. Targets for effective shade have been developed and are presented in Chapter 4. Flow-related targets are not appropriate at this time.

Comment CAG-25:
"However, it is obvious that the problem with temperature loading probably will not be effectively dealt with, as far as implementation goes, while water use and low flows are a neglected consideration."

Response:
This TMDL takes a phased approach. The factors that cannot be adequately evaluated have been identified, and a process is in place to furnish the necessary information to update the TMDL, if appropriate, while moving forward on implementing actions to address other factors.

Comment CAG-26:
"Specific regulation is necessary to eliminate areas of contention - as well as freeing up staff time to address a larger number of THPs."

Response:
Comment noted. See Response to General Comment 9.

Comment CAG-27:
"If desired conditions of increased pool depth and frequency are to be attained, management of land use applications dealing with high risk landslide zones, near stream shading (movement towards later successional, seral, near stream occupancy), must developed as part of the implementation strategy. The lack of habitat typing and the need to protect existing refugia indicates that further work needs to be done in refugia identification and protective strategy."

Response:
One of the goals of the TMDL is to restore potential shading of streams in the Scott River watershed including near stream shading. See also Response to General Comments 18 and 12.

Comment CAG-28:
"These parameters and measuring/monitoring goals indicate the need for measurement of other additional variables, with set targets - as indicated in the text of this document (i.e. inter-gravel fines, gravel embeddedness, residual pool volume, substrate size, turbidity, woody debris loading, water temperature, poll width-depth ratio and possibly fish population sampling - as well and near stream and upslope attributes: percent roaded area

reduction, percent road related erosion source eliminated, percent riparian overstory/understory closure, or other contributing mechanisms."

Response: See responses to CAG-14, CAG-16, and CAG-18.

6. Community Clean Water Institute (CCWI)

Comment CCWI-1:
"Currently the Scott River TMDL Action Plan is totally voluntary. As you can see by the above noted Water Code Section, this is both unreasonable and illegal – unless voluntary are found to be equal to or better than other enforceable criteria for meeting Water Quality Standards."

Response: See Response to General Comment 1.

7. USEPA Region 9 (EPA)

Comment EPA-1:
"The temperature TMDL needs to explicitly state that the effective shade curves are the numeric targets for the temperature TMDL. It would also be useful to provide information concerning the expected range of MWATs (from the Heatsource modeling) in the main channels."

Response:
Regional Water Board staff have incorporated these suggestions.

Comment EPA-2:
"The sediment source analysis approach is a well established method for sediment TMDLs. The document should provide more information on bank erosion estimation, particularly the proportion of bank erosion attributed to human activities. EPA supports the attribution of a portion of bank erosion to human activities as technically sound. However, the technical basis for the EMIHA method of estimating bank erosion should be further supported. Given that TMDLs must include a margin of safety, EPA supports conservative assumptions that are clearly justified."

Response:
Section 3.4.3 on EMIHAs in the Scott has been revised and expanded to better explain the process. Table 3.15 has been revised and expanded with more information. Also see Response to General Comment 15**.**

Comment EPA-3:

"Table 3-15 could be better described. It is not clear what the blanks in the Table represent concerning the inventoried 63 segments. Did these segments have no erosion? More explanation is encouraged. What was the recurrence interval of the measured features? The text suggests that each feature had a different recurrence interval. Are the tons delivered in Table 3-15 the measured voids or sediment delivery per year?"

Response:
See response to comment EPA-2.

Comment EPA-4:
"It would be useful to provide additional contextual information or sensitivity analysis regarding bank erosion and the EMIHA methods. The document should provide enough context that readers with less technical backgrounds can be convinced that a proportion of bank erosion can be attributed to anthropogenic activities upstream. The discussion on EMIHAs in section 3.1.6 should related to the discussion on bank erosion where possible. Section 3.4.3 summarizes that filling of stream channels (from sediment delivery) accelerates bank erosion. Please provide additional documentation supporting your key conclusions regarding the mechanisms of bank erosion in the Scott (see e.g. Madej and Ozaki, 1996 etc.).

We encourage developing sensitivity analyses to help place your EMIHA methods and results in context. For example, you might consider providing context for your methods based on a straight percentage of bank erosion attributed to human activities. Can you provide additional justification that the extrapolation of the percentage attributed to human activities should be based on geology?"

Response:
Sensitivity analysis is a process used within a computer model that uses multiple parameters to measure the sensitivity of variations in one or more parameters to variation in another. The TMDL Sediment analysis is a spreadsheet computation that does not lend itself to that type of analysis. Section 3.4.3 has been revised and expanded to respond to other parts of this comment. Also see Response to General Comment 15.

Comment EPA-5:
"EPA recommends that the document add in a discussion of the EMIHAs as a margin of safety."

Response:
Language has been added to this effect in Section 3.5.4.

Comment EPA-6:
"The analysis uses well-established methods and presents a sound technical basis. The water quality objective that states in part "water be increased more than 5˚F…" needs to

be explicitly discussed in the TMDL. EPA recommends that the document more clearly distinguish the TMDL and calculations from implications for further research and adaptive management."

Response:
Comment noted. Additional discussion of the 5 ^{o}F limit has been added to the staff report text.

Comment EPA-7a:
"It may be useful to point out to readers that the analytical approach to the temperature TMDL builds on many temperature TMDLs in the Pacific Northwest, including those established for the State by EPA in the North Coast region."

Response:
Text has been added to the staff report to address the comment.

Comment EPA-7b:
"We suggest that you describe how the narrative temperature objective properly constrains the analysis (and TMDL.) When EPA established several TMDLs for California, the "natural …temperature shall not be altered" was a crucial starting point for the analysis."

Response:
Text has been added to the staff report to address the comment.

Comment EPA-8:
"It may be useful to point out that Oregon Department of Environmental Quality had Heatsource peer reviewed. The peer review comments can be found at: http://www.deq.state.or.us/wq/HeatSource/HeatSource.htm.

Response:
Text has been added to the staff report acknowledging the peer review of the Heat Source model.

Comment EPA-9:
"EPA suggests that the discussion be clearly divided into conclusions related to the TMDL and suggestions/implications of the modeling for the future. For example, it is not clear which figures support the conclusion that surface water diversions are possibly significant in smaller tributaries. My reading of the surface diversions conclusions (for the modeled tributaries) is that temperature changes during the daily maximum in the South Fork Scott (Figure 4.21) and East Fork Scott (Figure 4.25) are approximately 0.5˚C and not for the entire reach. We used the information regarding model performance in

evaluating this to be insignificant. In Houston and Cabin Meadows, adding more surface flow resulted also in an insignificant reduction in temperature. An additional factor in Houston and Cabin Meadows is that the temperature is cool enough (a daily maximum that is around 15˚ - 17˚C) that the range of change is not likely to adversely affect salmonids. Table 2.8 suggests that adverse effects are not likely in this range. Note that the Heatsource results demonstrate that the localized and downstream effects are all insignificant."

Response:
Figure 4.27 in the public draft supports the conclusion that surface water diversions are possibly significant in smaller tributaries. The results presented in Figure 4.27 indicate that, given a 75% reduction in flow, an increase in temperature of 3 ^{o}C would occur 4.8 kilometers downstream of the diversion. A difference of 3 ^{o}C could be significant in streams that are closer to salmonid temperature thresholds. It is also worth noting that a stream with less ambient stream shade would experience more extreme temperature increases. Text has been added to the staff report to clarify Regional Water Board staff's interpretation of the modeling results.

Comment EPA-10a:
"An additional suggestion for the TMDL is to explicitly use the model performance to evaluate the significance of sources of stream temperature. Specifically, you could use the model error in determining the significance of the factor, along with the geographic extent of the temperature change and of course, the magnitude of the temperature change. In addition, we question that the microclimate analysis supports a conclusion of "moderate" significance. Our interpretation of Figure 4.28 is that the magnitude of microclimate effects is less than 1˚C. In addition, there would be no adverse effects to salmon of increasing to 14˚C - 15˚C."

Response:
Regional Water Board staff believe the relative change in temperatures that arise from different scenarios is the most relevant comparison, as opposed to difference related to calibration. Regional Water Board staff agree that an increase in temperature from 14˚C to 15˚C will not have an adverse effect. However, the same impact to a stream that is already reaching 21 ˚C may result in extirpation of salmonids.

Comment EPA-10b:
"The TMDL analysis should add an additional explicit discussion of how the TMDL meets the 5˚F prohibition in the water quality standard. This clarification is needed."

Response:
Text has been added to the staff report to address the 5˚F prohibition.

Comment EPA-11:

"EPA recommends that the document clearly separate references of the allocations (Figure 4.31) from the TMDL (Table 4.11)."

Response:
The document clearly states that the load allocation is expressed in Figure 4.32, whereas the TMDL is presented in Figure 4.31 and Table 4.7.

Comment EPA-12:
'We suggest that the TMDL include a fuller discussion of the modeling scenarios that result in the calculation of the TMDL. A brief, but explicit, discussion of the adverse effects on salmonids and natural stream temperatures would suffice. For example, a simplified version of Figure 4.14 with the scenario for potential vegetation could be presented and discussed. It may be useful to summarize the modeling data using some type of average in order to compare it more directly to Table 2.8. As a presentation suggestion for future TMDLs, we recommend that your consultant summarize the difference in current and potential SHADE, not vegetation height. Potential vegetation height is greater than what is needed in many streams to meet potential shade targets. This may also provide guidance as to which subwatersheds or past management practices need some type of increased focus."

Response:
A table (Table 4.7) has been added that presents the results of the potential vegetation modeling scenario in terms of five-day averages. Although the criteria in Table 2.8 are based on 7-day averages, the values reported in Table 4.7 are comparable to these criteria since the five days modeled (July 28 – August 1, 2003) were the five days of 2003 in which water temperatures were the highest.

Other more general comments not specific to the proposed Action Plan have been noted by staff for future consideration.

Comment EPA-13:
"If you agree, we recommend that the document explicitly state that modeling results indicate some areas are already meeting the TMDL (for example in the lower portion of the mainstream Scott and the South Fork Scott.) This may also apply to many areas in Figure 4.31 and Figure 4a of the UCDavis appendix. Figure 4a illustrates that there are streams that are close to potential height and thus various implementation activities like data collection may not be a priority in these areas."

Response:
Regional Water Board staff agree that some areas appear to be at or near potential vegetation conditions. However, because other areas upstream are not in compliance, to say that these areas are meeting the TMDL is inappropriate.

Comment EPA-14:
"**5-25 and 5-27.** Related to the MOUs on water temperature, EPA recommends that language clearly distinguish between shade (the TMDL) and stream temperatures. The language suggests a focus on high water temperatures. As analysis for this and other TMDLs shows high water temperatures can be natural in many streams; thus this TMDL focuses on shade. The language could be more inclusive to allow negotiations regarding remote sensing data, natural potential information, shade modeling, stream temperature modeling as well as stream temperature data collection. EPA cautions that stream temperature data alone will need significant interpretation regarding meeting the TMDL and associated water quality standards."

Response:
Regional Water Board staff agree that the effectiveness monitoring should focus on riparian conditions, rather than stream temperatures. The text of the staff report has been modified to reflect this. Regional Water Board staff also agree that remote sensing data, natural potential information, shade modeling, stream temperature modeling, and stream temperature data collection should be topics discussed in negotiations with the USFS and BLM.

8. Environmental Protection Information Center (EPIC)

EPIC-1 Comment: "We are extremely concerned that the implementation plan as currently written relies far too heavily on voluntary measures and the cooperation of interests who have not shown a tremendous eagerness or ability to address the very serious water quality issues in the Scott River."

Response:
See Response to General Comment 1.

EPIC-2 Comment: "We are far from satisfied that the present plan comes anywhere close to meeting these standards, and thus to fulfilling the Water Board's obligations under both the federal Clean Water Act and the Porter-Cologne Act. We are especially concerned that the draft plan fails to meet the anti-degradation standards of the Clean Water Act, as others have outlined to you in some detail."

Response:
See Response to General Comment 1.

EPIC-3 Comment: "For example, the plan suggests that Erosion Control Plans may be implemented if land managers fail to take appropriate voluntary steps to meet TMDLs. With all due respect, we think that approach is nearly backwards of the one required here. ECPs and monitoring must be required from the outset, and they must be enforced."

Response:
The Action Plan states that Erosion Control Plans can be required, and enforced, at any time, independent of other actions. The Regional Board has the authority to require self-monitoring reports under California Water Code Section 13267. The Action Plan states in many areas that land management plans with self-monitoring elements may be required when necessary. If and when these plans are required, effectiveness monitoring will fall on the shoulders of the landowner. The Regional Board will not be conducting monitoring itself as a part of these plans. However, the Regional Board believes that requiring self-monitoring or tracking of every landowner is not necessary to achieve the goals of the TMDL. Further, the Regional Board does not have the resources to implement such a wide-ranging program, and for this reason, land management and pollutant monitoring will only be required on an as-needed basis.

EPIC-4 Comment: "First, the implementation plan references the Aquatic Conservation Strategy of the Northwest Forest Plan. It is true that, in its original form, the ACS constituted an enforceable commitment by the Forest Service to maintain and restore water quality in degraded watersheds. Since a regulatory rollback by the Bush Administration, however, the ACS is only a shell of its former self. Under the present form of the program, Forest Service managers may continue to promote actions that degrade water quality, so long as they present a figleaf's promise of mitigation elsewhere. Simply put, if the ACS is a measure of the Forest Service's commitment to the restoration and protection of water quality, then the Forest Service is committed to avoiding its responsibilities."

Response:
Despite fluctuations in federal regulations, the USFS is bound by a management agency agreement (MAA) with the State and Regional Boards that requires projects to implement a set of best management practices that have been certified by both the State Water Board and USEPA. For timber harvest projects, the USFS must also obtain a waiver of waste discharge requirements from the Regional Board. To obtain a waiver, projects must meet a set of eligibility criteria, including conducting a cumulative watershed effects analysis. To maintain waiver coverage, projects must continue to meet a specific set of conditions, including a system to monitor TMDL prescriptions as from time to time adopted by the Regional Board and approved by the State Board. TMDL prescriptions are designed to protect and restore water quality conditions.

EPIC-5 Comment:
"the Forest Service, like many other public agencies in this era, is routinely starved of the resources it requires to accomplish the responsibilities with which it is tasked. Not only does the agency lack the staff to accomplish even routine monitoring, it receives, on average, about a tenth of the funding every year, which is required to meet the current maintenance needs on its road network. That means, of course, that even as the maintenance backlog continues to grow exponentially, the agency is falling ever farther behind. The consequences for water quality of deferred road maintenance are obvious:

more silt and higher temperatures. Note that road maintenance does not even begin to address the need to remove a large proportion of the vastly excessive road network."

Response:
Thank you for this comment. The MOU with the Klamath National Forest will be completed within two years of EPA adoption of the TMDL. Funding capacity relative to the work that needs to be completed will be considered in the MOU.

EPIC-6 Comment: "The bottom line: the Regional Water Board must make specific, enforceable requirements of the Forest Service in order for the Klamath national forest to properly prioritize the restoration and protection of water quality in the Scott River watershed. Only when the agency's chain of command understands that its operations face the likelihood of legal challenge will they recognize a legal obligation."

Response:
The Action Plan requires an MOU between the Forest Service and the Regional Board. If that MOU is not completed in a timely fashion, not satisfactory or not effective, other regulatory and enforcement mechanisms are in order and contemplated by the proposed Action Plan.

9. Friends of the Gualala River (FGR)

Comment FGR-1:
"It fails to address rain on snow, periodic, events that can have huge effects on sediment transport, channel, and riparian conditions,

It fails to address use of water impacts on low flow conditions that exacerbate sediment and temperature interaction - water use should be considered in the overall analysis
- where conservation practices must be considered in action plan"

Response:
1) See Response to General Comment 17.
2) At present there is not sufficient information on the relation between ground water use, surface water use, surface water flow, and surface water temperature. A ground water study has been proposed that would shed light on these questions, and Siskiyou County is planned as the lead agency.

Comment FGR-2:
The proposed TMDL must consider the range of scientifically supported instream and hill slope targets - that call for reduction of sediment sources, activity related to sediment production, and desired near and instream conditions.

Response:

Instream and hillslope indicators are presented and discussed in Chapter 2.

Comment FGR-3: "Currently the propose Scott River TMDL Action Plan is composed of totally voluntary actions. This does not meet the mandated state and federal standards."

Response: See Response to General Comment 1

10. Fruit Growers Supply Company (FGS)

Comment FGS-1:
"Allocation of sediment delivery for each site is questionable - the subjective nature is not likely repeatable, and the 25% allocation classes lead to a very high degree of sampling error (±20 - 30%). The error around this estimate is not reported and should be."

Response:
Commenter is correct that there is a degree ofprofessional judgment in estimating degree of anthropogenic sediment contribution. The methods used, however, are more likely to underestimate human-caused contribution than to overestimate it, because many small features and disturbances are not visible on aerial photos and are not the kinds of features included on GIS coverages. Examples are small mass wasting features and gullies, increased slopewash where timber harvest has thinned or removed canopy. The categories were deliberately chosen as broad, so as not to imply a precision that is not there, but as they average out, staff believe that they are sufficiently accurate for the purpose of the study, which is to determine whether there is impairment and estimate the approximate degree of anthropogenic contribution.

Comment FGS-2:
"Field observations do not distinguish between legacy sites and those resulting from current practices. While legacy sites from human activities over 50 years ago may still be contributing sediment they are not reflective of current practices, but allocating their contributions together will lead to misguided regulation &/or unreasonable target reductions of sediment from current practices."

Response:
See Response to General Comments 5 and 16.

Comment FGS-3:
"It appears wildfire effects were erroneously attributed to human activity in Table 3.15."

Response:

Wildfires are not attributed to human activity in Table 3.15 or elsewhere in the Staff Report. See also Response to General Comment 19.

Comment FGS-4:
"Flood altered channel with no mgmt upstream was erroneously attributed to human activity in Table 3.15."

Response:
See revised Section 3.4.3 and Response to General Comment 15.

Comment FGS-5:
"Indications of undisturbed channel in reaches with "lots of roads and harvest upstream…" demonstrate the weakness of this approach and question the assumption that an average rate is even applicable."

Response:
The description cited, "lots of roads and harvest upstream…" does not describe "undisturbed channel reaches"; it describes one single channel reach, which is a conspicuous exception to the pattern. Staff judge that the single exception does not invalidate the pattern observed elsewhere.

Comment FGS-6:
"Most importantly the derived averages were applied incorrectly for *small discrete features*. The factors were derived as a percentage of total contributions in Table 3.15 and applied to a subset of the total in Table 3.20 which was further added to another subset in Table 3.21 resulting in an erroneous estimate of human caused contribution. The factors should have been applied to the total just as they were derived and as they were applied to large discrete features in Table 3.17.

"This single error results in a 69% over-estimate of the current loading associated with human activity (88 vs 149 t/sq m/yr) for small features with a corresponding 20% under-estimate of that not associated with human activity (353 vs 292 t/sq m/yr) for small features. This translates to a 25% over-estimate in the *total current loading* associated with human activity and a 14% under-estimate in that not associated with human activity, thus erroneously derived load allocations and misguided target reductions."

Response:
This comment speaks to an error in the original development of table 3.15. An oversight allowed certain known management-related sediment contributions to be included in the calculation of the anthropogenic contribution factor from upslope EMIHA factors. After discussing this concern with Kelly Conner of FGS, staff addressed this oversight and changes were made to table 3.15. These corrections led to changes in the calculated

values in tables 3.16 through 3.21. These changes are subsequently reflected in the summary and allocation tables, Tables 3.22, and 3.23.

Comment FGS-7:
"Effective shade is modeled for the summer solstice when the sun is highest in the sky and streamside shade is least effective at filtering solar radiation. Theoretically this may seem reasonable, but in reality stream temperatures are still very much controlled by snow melt at this time and solar radiation has very little to do with resulting stream temperatures. The Draft Implementation language incorrectly states that temperatures and thermal processes were evaluated during the hottest time of the year. June 21 is not the hottest time of the year."

Response:
The draft is correct in saying that the hottest time of year was evaluated since the analysis evaluated thermal processes during the period of highest temperatures. Thermal processes were evaluated at the end of July and/or early August in all temperature model applications. Effective shade was evaluated at the summer solstice since that is the time of year solar radiation is the greatest, and is repeatable. The date of maximum stream temperature varies widely depending on the location and seasonal variability.

Comment FGS-8:
"The time to model the effectiveness of streamside shade is when the stream temperatures are most dependent on it, during the week of MWAT (max weekly avg temperature), which in this watershed is typically between the last week of July and the first week of August. I believe this adjustment to the modeling process will lead to a more realistic and achievable goal for streamside shade. This is especially true in the tributaries, and can be seen in Figure 4.17 (HeatSource results for SF Scott.)"

Response:
See response to FGS-7.

Comment FGS-9:
"Fully mature natural vegetation throughout the watershed…" is not natural and not an achievable or sustainable goal. The 10% adjustment factor mentioned in the text may account for the temporary effects of episodic events, but is not reflective of a sustainable condition. Over time one would reasonably expect a more cumulative effect resulting in a full range of conditions throughout the watershed."

Response:
Regional Water Board staff disagree. Review of historic aerial photos of undisturbed forested areas in the Scott and other watersheds indicate that the vast majority of riparian areas exhibit mature characteristics, natural disturbances not withstanding.

Comment FGS-10:
Table 4.9 is billed as "…the TMDL for temperature in the watershed" and either has a typographical error in the last column or is setting a goal of more than 100%.

Response:
Thank you. The typographical error in Table 4.10 has been corrected.

Comment FGS-11:
"A simple description of how the temperature TMDL is to be interpreted and applied on-the-ground would be a tremendous help in evaluating the potential impacts of implementation on our operations. Obviously the TMDL is targeting riparian shade, but the translation of "effective shade" to target riparian conditions is not provided. Effective shade was developed for riparian zones of 300 feet on each side of the stream network, but will this be viewed as a required or target width for riparian mgmt zones? If so, I did not see any justification for the use of this width. I would expect at least some tests of the effectiveness of other widths. This buffer should be reduced as much as possible to reduce the financial burden of this TMDL. Also I did not see any description of which streams or order of streams this shade allocation applies to. This is very critical to the extent of impacts this could have on vegetation mgmt in this watershed."

Response:
No riparian buffer width has been suggested as part of this process. The vegetation was mapped for 300 feet on both sides of the stream as part of the Heat Source modeling, in accordance with the existing methodology. The issue of riparian buffer widths will be addresses separately through the region-wide Riparian and Wetland Policy, which is currently under development.

The extent of streams in the Scott River watershed that have the potential to support the COLD beneficial use during the critical time periods was developed based on the perennial designation in the "srfish" stream database, and best professional judgment. The stream reaches that were used to develop the load allocation are those shown in Figure 4.31.

Comment FGS-12:
"It is very critical to the interpretation of this TMDL that the intentions of each sample method and measurement technique be clearly stated and described as fully as possible. It is just as important to state what the measurements were not intended to show and explain their limitations. For instance, shade allocations were developed at the watershed scale and are therefore intended to be applied at the watershed scale and not intended to necessarily be met at the site specific or project scale as stated in the Draft Implementation language (IV.C). The Technical TMDL will serve as a reference for many years to come and will outlive most of its developers so it must leave future

generations with a clear understanding of how it was expected to be interpreted. This is currently not clear at all and in many cases is confusing and misleading."

Response:
Comment noted. Regional Water Board staff have attempted to clearly state the intent and context of methods and measurements. In addition, Regional Water Board staff have employed established methodologies whenever possible.

Comment FGS-13:
"The recommendations listed in the Draft TMDL will reduce this uncertainty over time and should lead to reach-specific information which will facilitate the optimal allocation of restoration resources. The opposite is true for "properly functioning condition" matrices as in Table 2.2 with blanket targets without exception for the range of natural variability."

Response:
The values in Table 2.2 are desired conditions and not requirements, and are intended to be applied in a weight-of-evidence manner. If new understandings of instream conditions that are appropriate are developed, those understandings can be used to update or replace the Table 2.2, as part of an adaptive management process.

11. R.A. Gearheart, Ph.D. PE (RAG)

Comment RAG-1:
"There is an integration of the all the TMDL's that is not being considered, at least in the information that is present to-date. There is a relationship between sediment (which as I understand has just been added to the Klamath TMDL list), nutrients, and water temperature. I would like to see how the Board's strategies consider this integration of processes and water quality factors."

Response:
The relationship of sediment loads to factors controlling stream temperature cannot be quantitatively addressed at this point in time. The Scott River Temperature TMDL recognizes that a relationship exists, and incorporates the benefits of decreased sediment as an implicit margin of safety. The Scott River is not listed for nutrients impairments, thus nutrient loads were not evaluated. The Regional Board, in coordination with Oregon Department of Environmental Quality and U.S. EPA is developing a water quality model for the Klamath mainstem. One way that the tributary conditions will be integrated into the Klamath analysis is through model boundary conditions. Specifically, anticipated TMDL conditions for the tributaries will be used to assess compliance in the mainstem, through modeling scenarios.

Comment RAG-2:

"A drop in flows indicates a reduction in velocity which allows for more thermal input into the stream water column in the warmer months. How is this factor consider (sic) in the model and the plan?"

Response:
The Heat Source temperature model simulates dynamic mass transfer. Regional Water Board staff evaluated impacts arising from changes in flow from both surface diversion and reduction of groundwater inflows. These results of these evaluations are discussed in Chapter 4. Water use implementation actions are addressed in Section 5.1.8 of the staff report.

Comment RAG-3:
"Figure 3 shows how the August flows have decreased over the years. This data begs the question of why dealing with groundwater and surface water abstraction is not consider the principle (sic) component in the conceptual model."

Response:
Reduced low flows are only one temperature-related factor that has changed in the past century. This analysis evaluated all the identified factors related to human-caused changes in stream temperature to determine which of them are significant, so that actions can be taken to address them.

Comment RAG-4:
"In fact, given these conditions, riparian restoration will only make it worse in that will be transpiring shallow -cooler groundwater at the critical time in the stream. How was this factor considered in your model/s and implementation plans?"

Response:
See Response to General Comment 22.

12. Richard Gienger (RG)

Comment RG-1:
"A strong project proponent/landowner self monitoring/tracking program needs to be required and implemented."

Response:
The Regional Board has the authority to require self-monitoring reports under the California Water Code section 13267. The Action Plan states in many areas that land management plans with self-monitoring elements may be required when necessary. If and when these plans are required, effectiveness monitoring will fall on the shoulders of the landowner. The Regional Board will not be conducting monitoring itself as a part of these plans. However, the Regional Board believes that requiring self-monitoring or

tracking of every landowner is not necessary to achieve the goals of the TMDL. Further, the Regional Board does not have the resources to implement such a wide-ranging program, and for this reason, land management and pollutant monitoring will only be required on an as-needed basis.

13. Larry Hanson (LH)

Comment LH-1:
"Currently the proposed TMDL Action Plan is composed of totally voluntary actions. This does not meet the state and federal mandated necessary standards- 1) description of actions to be taken that would assure final compliance with Water Quality Standards over time, 2) Compliance schedule, 3) Monitoring to assure effectiveness of compliance and adjustment of TMDLs over time. TMDLS should be adopted as enforceable programs (under state law) with described actions, time lines, and monitoring to assure compliance with relevant standards. Voluntary programs that meet applicable standards are acceptable and should be encouraged."

Response:
See Response to General Comment 1.

Comment LH-2:
"The TMDL requirements (currently) do not contain sufficient information and assessment of current conditions: 1) It fails to address use of water impacts on low flow conditions that exacerbate sediment and temperature interaction. 2) It fails to address rain-on-snow, periodic events that can have huge affects (sic) on sediment transport, channel, and riparian conditions."

Response 1:
See Response to General Comments 6 and 17.

Comment LH-3:
"Water use and conservation practices should be considered in the action plan."

Response:
Water use and conservation practices are encouraged in the Action Plan.

Comment LH-4:
"Other factors that could be considered and are not currently in the TMDL requirements are: Assessment of the Relative Risk by slope, a matrix of desired in-stream and near-stream conditions (part of previous TMDLs but not this one), and elevated temperatures that can only be addressed by shade improvement."

Response:
It is not clear what "Relative Risk by slope" refers to. Desired in-stream conditions are listed in Table 2.2. This action plan does consider addressing elevated temperatures through shade improvement. Shade improvement is called for in the Temperature section of the Staff Report.

14. Hoopa Valley Tribe (HVT)

Comment HVT-1:
"The Draft Scott River TMDL includes excessive reliance on voluntary measures and needs to provide more incentive for dischargers/polluters to improve their practices. In this way, the Draft essentially fails to take the necessary steps to ameliorate the impacts of water use on water quality. (For an example of influential incentives leading to an effective, collaborative TMDL, please refer to the Garcia River effort on California's Mendocino Coast.)"

Response:
See Response to General Comments 1 and 6.

Comment HVT-2:
"All models and datasets utilized in the Scott TMDL must be available for public review. These datasets include all the GIS data (including roads, streams, and landslides), road surveys, temperature data, and macro-invertebrate data."

Response:
See Response to General Comment 8.

Comment HVT-3:
"The final Scott River TMDL needs to acknowledge that the stream flow regimes of recent years are contrary to those necessary for the recovery of water quality and fish resources. The final TMDL should recognize that changes in crops from water-hungry alfalfa to high-value dry-farmed species would benefit the TMDL's goals. Implementation of available water conservation measures – which does not mean groundwater pumping – should be instituted by a determined date."

Response:
See Response to General Comment 6.

Comment HVT-4:
"The final Scott TMDL must require for the Regional Water Board to exert authority in cases such as Shackleford Creek where the depletion of flows makes achievement of water quality objectives impossible. The State Water Resources Control Board has the

authority to require increased bypass flows to meet water quality standards as established in Supreme Court case No. 92-1911 (*Jefferson County PUD and City of Tacoma vs. Washington Dept. of Ecology,* see http://chrome.law.cornell.edu/supct/html/92-1911.ZD.html*).* This case explicitly states that water quality regulatory agencies can require bypass flows to achieve water quality protection recognizing that the management of water quality and water quantity are often inseparable."

Response:
See Response to General Comment 6.

Comment HVT-5:
"The Hoopa Valley Tribe expects the Board to ensure that widely accepted scientific method is used for the groundwater study and that it is openly available to the public. As a suggestion, the California Department of Water Resources can perhaps more aptly conduct the necessary study since the agency has previously studied Scott Valley groundwater conditions and its staff has the appropriate credentials for conducting such a study."

Response:
See Response to General Comments 3 and 6.

Comment HVT-6:
"We recommend the re-insertion of the language that was included in the pre-draft TMDL, but removed from the public draft, recommending that the State Water Board and its Division of Water Rights "take the findings of the research into consideration and act accordingly to protect and restore the instream beneficial uses of the Scott River and its tributaries, with particular focus on those beneficial uses associated with the cold water fishery." We expect that as changes in groundwater management are found to be necessary to protect and restore the beneficial uses of the Scott River, as required by the Clean Water Act, the Regional Water Board will take such management measures."

Response:
See Response to General Comment 6.

15. Humboldt Baykeeper (HB)

Comment HB-1:
"Section 13242 requires an implementation plan to include, among other elements, a description of the nature of necessary actions to be taken to achieve the objectives of the implementation program, including recommendations for appropriate action, a time schedule in which actions are to be taken, and a description of monitoring that will occur in order to determine compliance with the objectives laid out in the Plan. Cal. Wat. Code §13242 (a)-(c). The Plan does not meet these requirements."

Response:
See Response to General Comment 1.

Comment HB-2:
"The Plan does include timelines for the development of criteria for determining when these Control and Monitoring Plans will be required, but it includes nothing as to when, or if, these plans will actually be required."

Response:
See Response to General Comment 2.

Comment HB-3:
"Though the Plan calls for a 74% reduction in sediment loading from anthropogenic sources, for example, it does not contain specific, enforceable allocations of such reductions. Without such enforceable limits the implementation and assessment of the Plan's effectiveness will be difficult at best. Additionally, though the Plan encourages an increase in the amount of effective shade in order to address the temperature TMDL the Plan does not include specific requirements for landowners to take. The Plan needs to clearly delineate what will be required of landowners and phrase it in enforceable terms."

Response:
See Response to General Comment 1.

16. Karuk Tribe (KT)

KT-1 Comment:
"Please accept this document as a formal request for involvement in developing and researching any studies conducted in the Klamath basin."

Response:
Regional Water Board staff appreciates the offer to be involved in any upcoming Klamath basin studies. See also response to General Comment 3.

17. Kawaiisu Tribe of Tejon (KAWT)

KAWT-1 Comment:
"I would like to express a thank you for this opportunity to explain the importance of clean water and communities working together for the greater good."

Response:
Regional Water Board staff appreciates your comments on this project.

18. <u>Klamath Alliance for Resource and Environment (KARE)</u>

Comment KARE-1:
"The plan identifies anthropogenic sources of sedimentation as those attributed to forestry, ranching and agriculture but fails to identify the contributions made by development and existing residential improvements in the valley."

Response:
The widest-spread and most influential activities in the watershed center on timber and agriculture, and the TMDL study, done at watershed scale, concentrated on these land uses. Where more detailed information is needed at smaller scale during implementation, development and the potential for sediment waste discharges will get more attention. This issue is addressed in the Action Plan through the request for the County to develop an enforceable mechanism for managing ground-disturbing activities.

Comment KARE-2:
"The plan seems duplicative in nature, especially the forestry activities. These activities must go through for the North Coast water quality issues. Furthermore, activities that will occur near or adjacent to watercourses are already subject to 1600 permits, building permits, and Army Corp. of Engineer requirements."

Response:
See Response to General Comment 11.

Comment KARE-3:
"An expensive process is outlined for Siskiyou County to implement to meet the North Coast water quality objectives. Monitoring on such a large scale is economically not feasible for a rural county such as Siskiyou."

Response: See Response to General Comment 14**.** An economic impacts analysis was prepared for the Action Plan and is included in Chapter 6 of the Staff Report.

Comment KARE-4:
"Requiring Siskiyou County to create a grading ordinance seems duplicative considering the County is updating the Land Use Manual. If a grading ordinance is absolutely required, then I would encourage the NCRWQCB to only pursue an ordinance for that portion of the County that the NCRWQCB has jurisdiction for."

Response:
See Response to General Comments 7 and 11.

Comment KARE-5:

"KARE disagrees that a reduction in streamside vegetation is the primary reason for the increase in stream temperature. There are many other contributing factors in determining stream temperature within the Scott River watershed. The NCRWQCB disregards factors such as air temperature, elevation, aspect, and channel width. Physical conditions may be (sic) controlling water temperature, however, with the lack of scientific data on the part of the NCRWQCB it is (sic) hard to substantiate the assumption that human caused changes in streamside shad is the primary reason for an increase in stream temperature. Along these lines, NCRWQCB indicates that they have not researched historical vegetation levels along the streamside to use as a guide to establish their targeted shad goals and thus target temperature levels. It is KARE's recommendation that historical vegetation trends be established via historical aerial photo interpretation or other means to establish as realistic shade retention standard."

Response:
Air temperatures, aspect, and channel width are accounted for in the model analysis. Elevation and distance to a watershed divide are indicators of other factors such as air temperature and time of travel, which the model takes into account. The TMDL takes into account the best understandings of stream heating processes, as described in sections 4.1.1 and 4.1.2.

Comment KARE-6:
"The TMDL states that removal of 'any streamside vegetation that contributes shade shall not be allowed.' This seems overly restrictive considering the fact that no historical trends in natural vegetation patterns have been established and in light of the fact that the NCRWQCB has made an assumption in that the reduction of shade canopy increases stream temperature."

Response:
Nowhere in the Basin Plan language or *Chapter 5 Implementation* of the staff report does it say this. There are certain instances where the removal of streamside vegetation is in line with the goals of the TMDL. However, shade has been shown to be the most important factor in maintaining desirable stream temperatures, so any shade that can be provided to a waterbody is benefiting stream temperatures. In addition, streamside vegetation provides other benefits to the waterbody, including filtering sediment and other polluted runoff. See also response to KARE-5 above.

Comment KARE-7, 8, 9"
"The TMDL states the '…it is not possible to determine with certainty for each sediment delivery feature the proportion of natural and human-activity induced contributions.' In light of this statement, how can the NCRWQCB come to the conclusion of how much anthropogenic sources of sediment have been contributed? Along these lines, there are no statistical standards of error given for the contribution estimates."

"How did the NCRWQCB determine anthropogenic sources of sediment vs. natural sources of sediment? Were the sources field verified? It seems that sediment sources are attributed to land use activities based only on the fact that land use has occurred in the past. Were the anthropogenic sources measured in the field? Inclusion of this field data would be helpful in the review of this proposal."

"KARE encourages the NCRWQCB to implement more than just the South Fork Pilot Study. Extrapolating this data to other areas of the watershed is not statistically valid of scientifically supported given the diversity of topography, soil types, and land use activities within the Scott River Watershed as a whole."

Response to KARE-7, 8, 9:
See Response to General Comment 15 and Chapter 3 of the Staff Report.

19. Klamath National Forest (KNF)

Comment KNF-1:
"KNF is concerned about the gross scale of the sediment load allocation. A single average per square mile annual load is applied at the watershed scale. We recommend the load allocation recognize variability in sediment production rates of Scott River subwatersheds. Table 1 displays differences in total sediment volume by subwatershed (ranging from 531 to 1070 tons/square mile) and the varying relative contributions of natural vs. anthropogenic sources. At a minimum, we recommend that the Board allocate loads by landowner (percent ownership)."

Response:
The gross scale of the sediment load allocation is a function of the watershed-wide scale of the TMDL. During implementation, local areas will be considered in more detail. The more detailed scale called for in the comments are the next step as subwatersheds are evaluated for implementation.

The TMDL program has no plans to allocate loads by landowner.

Comment KNF-2:
"We recommend the Board consider prioritizing subwatersheds, regardless of ownership, for focused restoration. The prioritization basis could consider criteria such as proximity to protected or enhanced beneficial uses, differing stream reach sediment transport capabilities, and cost effectiveness of restoration efforts."

Response:
See Response to General Comment 12.

Comment KNF-3:

"The language of section 5.1.11.2, (Implementation Actions for the USFS, Temperature-Related Efforts) states: "Within Riparian Reserves, timber is not to be harvested….". We suggest replacing that text with wording consistent with the Salmon River Temperature TMDL and Implementation Plan that incorporates Riparian Reserve Management Standards and guides from the Klamath National Forest Final Land and Resource Management Plan. Reduction of fire risk and excessive fuel loads are key elements of current Forest Service Policy mandated by Congress. We believe fire risk reduction action is compatible with and essential to the long-term attainment of sediment and temperature TMDLs because frequency and scope of high intensity wildfire will be reduced."

Response:
The language referenced in Section 5.1.11.2 is intended as a description of current Forest Service commitments. The text has been changed to reflect the framework within which Riparian Reserves are managed.

Comment KNF-4:
"We suggest the 14 unilaterally developed items (in the MOU) either be removed from the current document or suggested as examples of the types of items that may be included in a jointly crafted MOU. Some of the items would require commitment of funds to long-term projects in advance of Congressional budget allocation; the Forest Service has no authority to do this."

Response:
From the Regional Board's perspective, it is important that all of the items noted in Section 5.1.11.4 be addressed as part of MOU development. The text has been modified to change 'include' to 'address'.

Comment KNF-5:
"We believe that any schedule discussions in the MOU should be in the larger context of all California land in Klamath River Basin. Prioritization of work within the Basin should be done at this larger scale so that the most critical work is accomplished first."

Response:
Regional Board staff and USFS staff have discussed the scale of an MOU, which could be at the watershed, forest or basin scale. Regional Board staff expect to continue these discussions during the course of defining and developing an MOU or MOUs that cover all Forest Service lands in listed areas of the Klamath Basin.

Comment KNF-6:
"We are confused by the tone of the last paragraph in section 5.1.11.4, which implies that there may be little room for joint collaboration in the MOU process."

Response:
Similar language has been included in many sections of this chapter, and is not intended to be anything other than a note regarding the unlikely possibility of a change in the current positive and cooperative working relationship between the Regional Board and the Forest Service. The Regional Water Board has an obligation to protect water quality, and the proposed Action Plan gives a preference and opportunity for as much joint collaboration as possible, while still leaving open all options available should that effort fail for any reason.

20. Klamath Riverkeeper Comments (KRK)

KRK-1 Comment:
"The Action Plan should recommend to the SWRCB that the state undertake a study. In light of the irrigation well and flow data presented below, the recommendation should be for and expedited emergency study because state listed Coho and other salmonids are at immanent risk of extirpation from Scott Valley and the upper watersheds."

Response:
See Response to General Comment 6.

KRK-2 Comment:
"The NCWQCB staff should request the data that DWR has on consumptive water use in the Scott Valley. The staff should also use the aerial photos it already has to check the accuracy of the data on land under irrigation. The database on important farmland can also be used to determine how much land is actually under irrigation in the Basin.**"**

Response:
See Response to General Comment 6.

KRK-3 Comment:
"Ask DFG directly and in writing about low flow barriers to salmon migration in the Scott River Basin. Read the last five years of Chinook and Coho spawning surveys (some are on the SVWC web site). DFG biologists and these spawning survey reports will confirm what I have observed myself and confirmed with DFG biologists: SPAWNING AND REARING GROUNDS HAVE BEEN DENIED EVEN IN RECENT AVERAGE WATER YEARS TO CHINOOK. COHO MIGRATION TO THE BEST SPAWNING AND REARING HABITAT IS DELAYED IN SOME YEARS."

Response:
The scope of the TMDL analysis does not include the effects of water use on aquatic habitat accessibility.

KRK-4 Comment:
"Proper analysis of the best available scientific information will lead to the finding that flows and temperature in the Scott River are compromised by groundwater pumping for irrigation. Therefore the Action Plan should call for Siskiyou County to declare a moratorium on new well drilling and well deepening in the Scott Valley bottoms pending further studies."

Response:
See Response to General Comment 6.

KRK-5 Comment:
"The TMDL must use the best science available on the connection between intensive forest management and decreased base flows. Irrigators are not responsible for all of the more than 20% reduction in flows found by Drake, et al."

Response:
The investigation of the connection between forest management and base flows was beyond the scope of the TMDL analysis.

KRK-6 Comment:
"The connection between flow and temperature is well established and is in no way controversial. The information presented above makes a clear and compelling case that the temperature impairment in the Scott River is not only the result of a vast increase in irrigation pumping but also the result of failure by DWR and DFG to enforce applicable Fish and Game and Water Codes and a result of intensive forest management in the uplands. Therefore, the TMDL Action Plan should include:

- Calling on DFG, the Siskiyou County DA and the California Attorney General to assure that habitat below diversions is not dewatered.
- Calling on DWR to enforce the water code, including season of irrigation.
- Calling on SWRCB to determine the extent of interconnected groundwater and the connection between increased consumptive irrigation water use and failure to meet adjudicated minimum fish flows in the Scott River.
- Calling on the Siskiyou County Superior Court – which retained jurisdiction over the Scott Valley Adjudication – to correct the obvious error in the delineation of interconnected groundwater promulgated in the Adjudication Decree.
- Identifying forest management (disturbance) thresholds for negative impacts on base flows."

Response:
See Response to General Comment 6 and responses to the preceding Klamath Riverkeeper comments above.

KRK-7 Comment:

"The TMDL Action Plan should identify those types of landforms on which intensive forest management and road building must be restricted via the THP planning process. This can not be left to the individual THP level because many THPs are not reviewed in depth and if reviewed are not visited on the ground by your staff. The high risk landforms need to be identified in the TMDL from the geomorphic Forest Service GIS databases as a tool for those who will be doing THP reviews. Fortunately, the US Forest Service has already done 90% of the job for you and all you need to do is incorporate their geomorphic database which is public information and identify those high landslide risk lands that will be addressed through the THP process."

Response:
Both the USFS planning process and the CDF review team process identify and restrict operations on unstable landforms.

KRK-8 Comment:
"Whether or not Siskiyou County adopts an effective grading ordinance the NCWQCB must include effective native surface and gravel road maintenance requirements in the TMDL Action Plan. Annual post-winter and post major storm inspection and timely correction of drainage problems identified through such inspections should be included as an independent requirement of the Action Plan."

Response: See response to General Comment 1. All actions in the Action Plan have time limits for completion of the action, and the Plan anticipates Regional Board actions in the event the proposed actions are not successful. In addition, existing permits address sediment delivery from roads, and the Plan notes that the Executive Officer can require a plan to address sediment delivery sources at any time.

KRK-9 Comment:
"The Action Plan should call for an independent evaluation of voluntary restoration in the Scott River as a prerequisite for incorporating voluntary compliance into the TMDL and Basin Plan. If the evaluation shows that voluntary compliance works, the voluntary provisions favored by Siskiyou County, timber and agricultural interests can then be amended into the TMDL and Action Plan. This approach would put the burden of proof where it belongs. Klamath Riverkeeper is ready to assist Siskiyou County in designing and securing funds for such an independent evaluation.

Voluntary compliance, voluntary restoration, has had 20 years and more to demonstrate what it can do. It has failed to reverse the decline in Scott River beneficial uses, water quality and salmon populations. It is time to give real, honest, meaningful and compassionate enforcement a chance and to require the voluntary approach to prove its claims. This is the path which the NCWQCB and its staff must take if you are serious about your obligation to end pollution and restore beneficial uses. We are counting on you to do your job."

Response:
See Response to General Comment 1. Regional Board staff support an evaluation of the success of restoration activities in the Scott watershed.

21. Mendocino Sierra Club (SC)

Comment SC-1:
"I am appalled that the present draft Scott River Temperature Action Plan does not address instream flow as a factor in temperature impairment. The removal from the July draft of the Division of Water Rights' role in restoring instream flows is indefensible. The Scott River, like most other northcoast rivers, is impaired for temperature due to the increased diversions of surface water over the last thirty years. Summer flows have been reduced to the point of dryness."

Response:
See Response to General Comment 6.

Comment SC-2:
"The median summer/fall low flow in the 50's was 68 cfs. That has progressively declined down to 14 cfs in the 2000's. In 2001 the low flow declined to just 3 cfs and ran under 5 cfs *for three months*. These low levels in the main stem mean many smaller tributaries must be at or near dryness as indicated in the references above. This draft's limited approach of only attempting to provide shade for the last cup of water would be fruitless."

Response:
The analysis identified both shade and groundwater accretion as the most important factors controlling stream temperatures in the alluvial reaches of the Scott River. Also see Response to General Comment 6.

Comment SC-3:
"They can review existing water rights and establish by-pass conditions for summer withdrawals."

Response:
See Response to General Comment 6.

Comment SC-4:
"They can reallocate water rights giving recognition of the preemptive rights of the federal Clean Water Act reestablishing the beneficial use of the fisheries."

Response:

See Response to General Comment 6.

Comment SC-5:
"The listed implementation items WA-1 and WA-7 assigned to CDFG to acquire and dedicate existing water rights to instream flows should be handled by the Water Board."

Response:
The actions identified are from the Coho Recovery Strategy (DFG, 2004), Chapter 10, Table 10.1. In the DFG table, entities identified for action on these items include DFG, Department of Water Resource, Siskiyou RCD, and the Scott River Watershed Council. In addition, the State Water Resource Control Board would have to be involved in any actions addressing water rights.

Comment SC-6:
"They can restore funding for the water gauges necessary to document stream conditions. The last read-out from the only reporting USGS gauge on the Scott was September 2004."

Response:
The USGS continues to operate the gage near Fort Jones. Data can be viewed at http://waterdata.usgs.gov/ca/nwis/uv/?site_no=11519500&PARAmeter_cd=00065,00060
The California Department of Water Resources operates two other gages in the basin:
http://cdec.water.ca.gov/cgi-progs/staMeta?station_id=FCC
http://cdec.water.ca.gov/cgi-progs/staMeta?station_id=SCK.

In addition, the Siskiyou RCD is gaging flows at three other locations in support of a water balance study.

Comment SC-7:
"They can review and report Fully Appropriated status of the various reaches of the watershed."

Response:
See Response to General Comment 6.

22. Michele Marta (MM)

MM-1 Comment:

"I am concerned that the Action Plan does not adequately address the issues that their (Regional Water Board staff's) data implies. It is time that the agricultural and timber industries pay fully for their operations, which includes ameliorating the total impacts of

these industries. Self regulation will not work... I am writing to request that the Water Quality Control Board fulfill its mandate from the federal Clean Water Act and California's Porter Cologne Act by requiring enforceable, time-specific standards and monitor compliance. Non-compliant users should be prosecuted to the full extent of the law. "

Response:
See Response to General Comment 1

23. Daniel Myers (DM)

Comment DM-1: "In preparing comment on the Scott River draft and have been puzzled at the failure to address the problem of very low summer flows and their effect on temperature. The draft makes a case for the need of implementation measures without any meaningful response."

Response: See Response to General Comments 1 and 6.

24. National Marine Fisheries Service (NMFS)

Comment NMFS-1:
"5.1.1 Page 5-2, bullet 3- Add the USFWS to the list of parties that have been addressing waste water discharges from roads and other sources. The USFWS has been helping pay industrial timberland owners to fix upgrade/storm proof roads and road crossings."

Response:
The text of the Staff Report has been changed.

Comment NMFS-2:
"Page 5-3, bullet 4 - Suggest that Siskiyou County formally approve and subscribe to the Five Counties Water Quality and Stream Habitat Protection Manual for County Road Maintenance."

Response:
The text of the Staff Report has been changed.

Comment NMFS-3:
"Page 5-3, bullet 9 - Include the USFWS in the list of agencies with which the Regional Water Board (RWB) will work cooperatively."

Response:
The text of the Staff Report has been changed.

Comment NMFS-4:
"5.1.4 Page 5-8, third paragraph - Same as Bullet 4 above…Suggest that Siskiyou County formally approve and subscribe to the Five Counties Water Quality and Stream Habitat Protection Manual for County Road Maintenance."

Response:
This suggestion has been added to the text of Section 5.1.4.

Comment NMFS-5:
"5.1.6. Page 5-12, paragraph describing filing Notices of Intent and Plans of Operation to the USFS… - The Feb 2, 2005 McClure Decision (http://www.goldgold.com/legal/McClureDecision.pdf and (http://www.goldgold.com/legal/mcclure.htm) has for the time being, until the USDA-FS amends its Section 261.10 Regulations, rendered it unnecessary for a mining claim holder to file either a Notice of Intent or a Plan of Operations prior to undertaking suction dredging within National Forest lands. The TMDL Plan should therefore encourage the USDA-FS to revise Section 261.10 as soon as possible, making criminal a miner's failure to file a Notice of Intent and/or a Plan of Operations prior to undertaking suction dredging."

Response:
As a first step in the assessment of dredge mining, Regional Board staff will review the existing regulatory framework with respect to dredger mining. The Action Plan and Staff Report have been modified to reflect this.

Comment NMFS-6:
"5.1.7 Page 5-14, paragraph 6 - Change "encouraged" to "permitted" in the last sentence of this paragraph."

Response:
The text has been changed from 'are encouraged' to 'may be acceptable'.

Comment NMFS-7:
"5.1.8.2 Page 5-16 - What action(s) will the RWD take if Siskiyou County does not commit itself to conducting a comprehensive groundwater study in the Scott River Basin? Perhaps the same language found in the last paragraph of section 5.1.4 could be used here…"Should the County fail to or choose not to develop …., the RWB shall initiate appropriate permitting or enforcement actions relating to groundwater use, until a groundwater water is undertaken."

Response:

The text of the Staff Report has been changed to include actions that would be taken in the event the primary action is not successful.

Comment NMFS-8:
"5.1.9 Page5-18, last paragraph - Include restoration of side channel/meander wetlands habitat in the list of projects that will be encouraged by the RWB."

Response:
The text has been changed to address more explicitly channel morphology issues.

Comment NMFS-9:
"5.1.11.2 Page 5-23, third paragraph
This report states that within Riparian Reserves, timber is not to be harvested.
For your information and for comparison…removal of trees (to reduce understory and ladder fuels and to increase vigor of remaining trees) less than 20" dbh is sometimes undertaken on Federal lands in the outer site tree height of Riparian Reserves, if canopy cover is not adversely affected (i.e., remaining at or greater than 80 %, as per "An Ecosystem Approach to Salmonid Conservation", by Brian Spence et al., 1996), and if the potential for mobilization of sediment to water channels in avoided or minimized. This needs to be reconciled in any future MOU between the RWB and the USDA-FS KNF."

Response:
Comment noted.

Comment NMFS-10:
"5.1.11.3 Page 5-25, Contents Related to Grazing Activities
If monitoring does document bank instability/trampling, and loss or lack of reestablishment of riparian vegetation, the possible termination of grazing permits on Federal lands should be considered. Include this option in any future MOU between the RWB and the USDA-FS KNF."

Response:
Comment noted.

Comment NMFS-11:
"5.1.13.2 Page 5-29, Table 5.5, under Livestock Access Limitation Practices
For Stream Crossings…Ensure that interlocking, angular rock is used to stabilize stream crossings, so that fish do not attempt to spawn there."

Response:
Comment noted.

Comment NMFS-12:
"5.1.15 Page 5-34, second paragraph - The RWB should encourage the NRCS to actively engage and consult with local, state, and Federal regulatory agencies on all projects for which it has discretionary and/or funding involvement."

Response:
The text has been changed.

25. Denver Nelson (DN)

Comment DN-1:
"The Scott River sediment TMDL is primarily based on computer simulation and not observed data."

Response:
This comment represents an inaccurate reading of the Staff Report. Field data were collected and then collated and summarized through a series of spreadsheets, but this is not a computer model, and it is based upon observed data. Also see Response to General Comments 1 and 6.

Comment DN-2:
"It is proposed to reassess Scott River sediment in 10 years. Unless the Scott TMDL is based on objective, reproducible data, there can be no way of determining if the purposed management changes had any effect."

Response:
See response to comment DN-1.

Comment DN-3:
"Restoring long lost riparian trees in order to decrease Scott River temperatures will only work if the long lost flow is restored and the feeding streams' flow and temperatures are also restored."

Response:
Regional Water Board staff developed the temperature model applications using extensive data describing observed stream temperatures, air temperatures, relative humidities, wind speeds, stream flows, shade levels, and bankfull dimensions. In addition, staff made use of infrared and color videography data in the development of the model applications. Regional Water Board staff agree that it is possible that hydrologic changes may be needed for riparian potential to be met.

Comment DN-4:
"This of course means that there is no water left for fish unless the California Constitution is amended or that water rights are purchased from willing sellers. The state cannot mandate river flows for fish protection (*Fullerton v. State Water Resources Control Bd.*90 Cal.App.3d 590; 153 Cal.Rptr.518.) All the regulations in the current rule book cannot increase the flow of water in the Scott."

Response:
Comment noted. This plan does not propose to mandate river flows.

Comment DN-5:
"If the goal of this TMDL is to increase the numbers of fish in the Scott and Klamath Rivers, a base line count as well as continued monitoring of fish numbers is essential."

Response:
The California Department of Fish and Game operates a downstream migrant trap on the Scott River to monitor the production of juvenile salmonids, and conducts spawner surveys to monitor adult populations.

Comment DN-6:
"If the goal of this TMDL is to decrease the amount of sediment in the Scott and Klamath rivers, a base line sediment input number is needed as well as continued monitoring of new sediment input is essential."

Response:
See response to comment DN-1. As studies proceed during implementation, the sediment input numbers for different subwatersheds can be refined.

Comment DN-7:
"If the goal of this TMDL is to change the temperature of the Scott and Klamath Rivers in order to make the rivers more fish friendly, the current temperatures must be known and future temperatures must be monitored in order to see if the suggested manipulations had any effect."

Response:
Current stream temperatures in most areas of the watershed are well-documented. Regional Water Board staff agree that effectiveness monitoring and adaptive management will be necessary in the future.

26. New 49ers (49ERS)

Comment 49ERS-1:
"The New 49'ers believe that it would be wasteful to expend scarce public funds and limited valuable resources, which could be put to much more beneficial uses elsewhere, developing information or regulation that already exists concerning the very small amounts of suction dredging activity that takes place along the lower Scott River"

Response:
The New 49ers believe that the amount and type of suction dredging they do is not detrimental to the streams and that studies available demonstrate this. They have committed to sending staff documentation to this effect by November 15, 2005. Staff look forward to receiving this material and will take it into consideration in the analysis called for in the Action Plan.

27. North Coast Environmental Center (NEC)

Comment NEC-1:
"We want to thank the North Coast Regional Water Quality Control Board [WQCB] for its belated hearing on the Scott River PLAN. One of our chief concerns with the PLAN has to do with its process of development that has overwhelmingly favored participation of the polluters rather that those affected by the cumulative watershed effects. One meeting was hastily and belatedly added to the Arcata area on October 19."

"Chapters 9 and 11 document that the WQCB has almost exclusively limited the participation and publicity regarding the plan to the polluters. Chapter 11 documents that the technical advisory group [TAG] was dominated by polluters. This is not to say that polluters shouldn't be involved in development of the TMDL, but it appears that the WQCB has developed a TAG to oppose enactment of a reasonable plan, and that the polluters have even less respect for the WQCB as a result.

"Rumors persist on the North Coast that representatives of the affected coastal communities were barred from participation in TAG committee put together by the WQCB."

Response:
Chapter 11 of the Staff Report details the extensive public involvement conducted as part of the Scott River TMDL development process. See also response to General Comment 3.

Comment NEC-2:
"The TMDL calls for measures to reduce sediment, and encourage the return of streamside shade. But, unlike the Garcia plan the Scott River TMDL has few mandatory objectives. The federal Clean Water Act and California's Porter Cologne Act require enforceable standards. We ask the WQCB to require enforceable time-specific standards in the implementation of the Scott River TMDL! The California State Water Code

Section 13242 requires specific actions to achieve water quality objectives, a time schedule and a plan for monitoring compliance."

Response:
See Response to General Comment 1.

Comment NEC-3:
"Another temperature related issue has to do with ground water pumping. Fish advocates believe that to tackle stream temperature issues you have to get a handle on ground water pumping. The WQCB must gather data to illuminate the connection between ground water pumping, streamflow and temperature."

Response:
See Response to General Comment 6.

Comment NEC-4:
"The WQCB must hold firm on the county developing a process that is a "grading ordinance" or a functional equivalent."

Response:
See Response to General Comment 7.

28. Pacific Coast Federation of Fishermen's Association (PCFFA-1)

PCFFA-1 Comment:
"Include downstream affected communities as stakeholders."

Response:
See Response to General Comment 3.

PCFFA-2 Comment:
"Specify an enforceable time schedule for evaluating the progress of implementation, followed by a back-up plan of action."

Response:
See Response to General Comment 1.

PCFFA-3 Comment:
"Include a set of default prescriptions; regulation empowers local action and is required by statute."

Response:
The Regional Board is developing guidelines and standards for use in the future. Until such guidelines have been approved, the use of the *Handbook for Forest and Ranch Roads* developed by Pacific Watershed Associates, 1994 can be useful for guidance.

Comment PCFFA-4:
"Low flows must be addressed in order to restore fisheries."

Response:
See Response to General Comment 6.

PCFFA-5 Comment:
"Require transparency of data as a criterion for the groundwater study."

Response:
See Response to General Comment 8.

PCFFA-6 Comment:
"Address road-related sediment by requiring a grading ordinance or functional equivalent."

Response:
See Response to General Comment 7.

PCFFA-7 Comment: "Address rate of land disturbance, especially harvest plans targeting riparian corridors and in coho refugia."

Response: Generally speaking, limiting riparian harvesting, reducing activities on unstable areas, and reducing near-stream roads and crossings are part of the Forest Practice Rules, the USFS planning process, and the general permits and waivers adopted by the Regional Board.

29. Quartz Valley Indian Tribe (QVIC)

Comment QVIC-1:
"However, we question the ability of Siskiyou County to adequately conduct the study based on limited funding and technical capabilities. Agencies such as the Department of Water Resources and United States Geological Survey are better equipped and experienced to undertake a study of this magnitude and nature. We request that QVIR be intimately involved in the development and implementation of the groundwater study."

Response:

See Response to General Comment 6.

Comment QVIC-2:
"The failure to quantify the extent of important land uses that impact water quality, such as timber harvest, road densities, near-stream roads, and road-stream crossings."

Response:
Information on road densities, near-stream roads, and road crossings is presented in Chapter 3, by subwatershed. The available information on timber harvest is incomplete both spatially and temporally. As discussed in Section 3.4.3 and Response to General Comment 15, staff relied on the limited available information, review of aerial photos, and field observations. More quantitative information on each of these factors has been added to the Staff Report in Section 3.4.3 and is summarized in Table 3.35 and Figures 3.7 to 3.14.

Comment QVIC-3:
"The failure to use all available tools to identify and manage risks to water quality. Use of the readily-available SHALSTAB shallow debris torrent model, for example, would enable the identification of erosion hazard areas that could then be used to evaluate the relationships among past watershed management activities and as a screen for guiding future watershed management decisions."

Response:
See Response to General Comment 18

Comment QVIC-4:
"Remote-sensed vegetation data, including change scene detection data, should have been used to characterize forest health, growth and its relationship to cumulative watershed effects."

Response:
See Response to General Comment 20.

Comment QVIC-5:
"The failure to spell out that peak flows in many watersheds within the Scott basin are unnaturally high due to land use impacts. Timber harvest and roads elevate the risk associated with rain-on-snow events and they increase peak flows, which, in turn, accelerate erosion and channel scouring which result in shallow, open streams that are then vulnerable to warming."

Response:
See Response to General Comment 17.

Comment QVIC-6:
"The lack of transparency of models and the data used in them is regrettable. All models and data utilized in the Scott TMDL should be available for public review."

Response:
See Response to General Comment 8.

Comment QVIC-7:
"Relies far too much on voluntary measures and needs to be strengthened to give dischargers more incentive to improve practices."

Response:
See Response to General Comment 1.

Comment QVIC-8:
"Failure to take necessary actions to ameliorate the impacts of water use on water quality."

Response:
See Response to General Comment 6.

Comment QVIC-9:
"Failure to target essential coho salmon habitat and prioritize it for protection and restoration."

Response:
See Response to General Comment 12.

Comment QVIC-10:
"While the technical analysis recognizes cottonwood gallery forest as the potential vegetation for valley riparian areas, the implementation chapter does not set forth a plan that will allow restoration of a more natural sinuous channel with a connection to its floodplain; without such changes, full riparian restoration will likely be confounded."

Response:
See Response to General Comments 5 and 12.

Comment QVIC-11:

"Relies too heavily on the State's Forest Practice Rules program, which has been scientifically demonstrated, to both the California State Board of Forestry and the Regional Water Board, to be inadequate to protect stream habitat needed for the recovery of at-risk Pacific salmon like coho salmon."

Response:
See Response to General Comment 9.

Comment QVIC-12:
"The lack of a clear and specific monitoring plan that would help track the success of mitigation and restoration measures, and which would allow for cooperative adaptive management, including Tribal participation, as an element of the TMDL's implementation. The TMDL asserts that a monitoring plan will be developed later, but it would be better to formulate a preliminary plan now."

Response:
The TMDL Action Plan requires that the Regional Board develop a compliance and trend monitoring period one year from the date of US EPA approval. The Staff report provides a preliminary outline for that plan on page 6-4. Regional Water Board staff will work cooperatively with other agencies and organizations to develop the plan.

Comment QVIC-13:
"Restoration and protective actions need to target those areas with the greatest existing aquatic and biological diversity as a priority."

Response:
See Response to General Comment 8.

Comment QVIC-14:
"The final Scott TMDL needs to explicitly recognize what is known about coho salmon in the Scott River basin as recommended in early comments by QVIC (2004, 2005b). We suggest that the following language be added to the end of the second paragraph on page 2-5 (after "… no population estimates were made from this information): "In recent years, many surveys have been conducted to identify locations where coho salmon spawn (Quigley, 2005, Maurer, 2002; Maurer, 2003; SRCD, 2004). These data provide clear indication of a difference in strength between year-classes (two are weak and one is strong), and that all three brood years are showing positive trends (SRCD, 2005). "

Response:
Thank you for identifying these references. The section of the problem statement dealing with coho salmon populations and distribution is provided as background for the identification of sediment and water temperature impairments. It is not meant to be

exhaustive, and the Regional Board believes the information provided is sufficient as background for establishing sediment and temperature impairment.

Comment QVIC-15:
"The Final Scott TMDLs in the Scott River basin need to recognize that aquatic habitat problems must be resolved or, at least, showing major recovery trends by 2015-2020, when ocean conditions are likely to enter a period of poor survival for salmon due to the Pacific Decadal Oscillation."

Response:
The Scott TMDLs and Action Plan do recognize the urgency in salmon recovery. Regional Water Board staff believe the time schedules proposed in the Action Plan are sufficient to make major progress by the years 2015-2020.

Comment QVIC-16:
"The final Scott TMDL needs to recognize the basin's pattern of use by fall chinook and specifically address the abatement of sediment problems in the canyon where California Department of Fish and Game data show they spawn."

Response:
The Sediment TMDL addresses load allocations by source category for the entire Scott River watershed, including the canyon.

Comment QVIC-17:
"The Scott TMDL Problem Statement should specifically recognize the processes that are causing pollution and the linkages between human activities and water quality impairment. While the origin and mechanisms of water quality problems in the Scott River are well documented (Kier Associates, 1991; 1999; CH2M Hill, 1985), the problem statement describes these relationships only vaguely."

Response:
The Problem Statement clearly identifies how roads and activities with the potential for ground disturbance (including timber harvest) effect water quality. See also the discussion of land use in Section 1.5.7.

Comment QVIC-18:
"Section 2.4 of the Scott TMDL avoids clear discussion of major topics that must be addressed honestly if sediment pollution is to be abated: 1) road densities and crossings need to be quantified and limits set to reduce the risk they represent for sediment pollution and damaging peak flows, 2) timber harvests and their links to cumulative watershed effects must be described and disturbance limits set, 3) forest growth needs to be assessed to confirm the assumptions made concerning watershed recovery to

background levels for sediment yield and natural hydrologic function, and 4) unstable areas need clear identification so that activities on these areas can be limited."

Response:
Comment noted. Key references on cumulative watershed effects are included and discussed in Section 3.1.6. A number of the concerns noted in the comment, including limiting riparian harvesting, reducing activities on unstable areas, and reducing near stream roads and crossings are already considered as part of the Forest Practice Rules, the USFS planning process, or the general permits and waivers adopted by the Regional Board. Also see Response to General Comment 17 and the responses to QVIC-19, QVIC-21 and QVIC-22.

Comment QVIC-19:
"A target for road densities of less than 2.5 mi./sq. mi should be included in Table 2.4."

Response:
Proposed watershed desired conditions for roads are intended to address design criteria of roads that result in decreased sediment delivery over time, and thus don't rely on specific road density as a surrogate for road design and maintenance practices that minimize sediment delivery. Road density may be considered for inclusion in future updates of the sediment indicators list.

Comment QVIC-20:
"The VESTRA-developed GIS layer of roads used by the RWB for its TMDL under-represents roads and skid trails in some areas of the Scott watershed (Figure 4). Only major haul roads are included, which means that many temporary roads and skid roads that can increase erosion remain unaccounted. This should be noted under margins of safety in 3.5.4."

Response:
Section 3.5.4 has been revised to include discussion of EMIHAs as a safety factor. Also see Response to General Comment 15.

Comment QVIC-21:
"The final Scott TMDL should provide a table of road densities by Calwater Planning Watershed. There are 68 Calwater Planning Watersheds in the Scott River basin. A chart should be made for each of the sub-basins where there is high road densities associated with land management. These charts and tables could be easily made from existing data by a capable GIS analyst, of which the RWB has several. In the sediment source analysis for the mainstem Trinity River (Graham Matthews and Associates, 2001), table 37 (page 127) were presented showing road lengths, drainage area, and road densities."

Response:

The TMDL has been revised to include further detailed information on road densities and lengths, by subwatershed.

Comment QVIC-22:
A target of less than 2 crossings per mile of stream in high-risk areas should be added to Table 2.4.

Response:
Proposed watershed desired conditions for roads are intended to address design criteria of roads that result in decrease sediment delivery over time, and thus don't rely on specific number of road crossings as a surrogate for road design and maintenance practices that minimize sediment delivery. Road crossings may be considered for inclusion in future updates of the sediment indicators list.

Comment QVIC-23:
"It is unknown how many road-stream crossings were surveyed, but the failure rate is likely higher than the TMDL target of 1% of crossings failing in a 100-yr return interval storm, given that the 1997 storm was only a 14-year return interval storm."

Response:
Comment noted.

Comment QVIC-24:
"The Scott TMDL discussion on Hydrologic Connectivity (in 2.4.1.2) makes assumptions with regard to road-related projects on timberlands that may not be supported. For example, it implies that roads can be hydrologically disconnected and that impacts from roads can be fully mitigated without reducing road densities."

Response:
Section 2.4.1.2 does not say or imply that hydrologically disconnecting roads can fully mitigate sediment delivery; the section discusses decreasing connectivity as a way of decreasing sediment delivery.

Comment QVIC-25:
"The road network in the Scott River basin is well beyond that which can be maintained, and a similar requirement to that in the Redwood Creek TMDL is needed for the Scott TMDL."

Response:
Proposed watershed indicators are intended to get at the features of roads that lead to sediment delivery and thus don't rely on road densities as a surrogate for road design and maintenance. Road density may be considered in future updates of the sediment indicator

list. Also, reducing near-stream roads and crossings are already part of the Forest Practice Rules and the USFS planning process. Also see General Response 17 and QVIC-19.

Comment QVIC-26:
"SHALSTAB maps should be included in Section 2.4.3.6 of the TMDL, and should also be made available electronically in a GIS format. The SHALSTAB maps should also be used in GIS analyses to quantify the percentage of the predicted unstable areas that have been disturbed in each Calwater Planning Watershed."

Response:
SHALSTAB, a computer model to evaluate risk of shallow landslides has been applied in the Scott River watershed by Derksen (2005). The SHALSTAB model is useful and should be applied in future predictive studies, but it was not applied in the TMDL study, which is concerned with observable effects on the ground and not based on modeling. SHALSTAB models are used by Regional Board staff in evaluating Timber Harvest Plans. Also see Response to General Comment 18.

Comment QVIC-27:
"we recommend that the RWB include TMDL tables and charts of the percentage of each Calwater Planning Watershed that has been timber harvested over the period of available data, and include them in section 2.4.3.5."

Response:
See response to QVIC-2.

Comment QVIC-28:
"The RWB staff should be using remote sensing data for reconnaissance and analysis, such as change scene detection, to understand the patterns of landscape disturbance and forest growth and to build that knowledge into the TMDL."

Response:
See Response to General Comment 20.

Comment QVIC-29:
"A map of the transient snow zone (Figure 11) needs to be added to the Scott TMDL as well as a discussion of increased peak flow, channel scour and resulting increased water temperature."

Response:
See Response to General Comment 17.

Comment QVIC-30:
"The following parameters should be added to Table 2.2: cross-sections, median particle size distribution, volume of sediment in pools (V*), turbidity, mainstem pool depths, and tributary pool depths (see details below). The RWB staff acquired a great deal of data related to channel conditions for the Scott TMDL, but useful summaries (i.e. charts or tables) for most of the datasets are missing from the document."

Response:
The Regional Board reviewed literature on instream parameters and determined appropriate values for these parameters for TMDLs in the North Coast Region. These parameters are discussed in the following document: Draft Desired Salmonid Freshwater Habitat Conditions for Sediment-Related Indices, Prepared by Rebecca Fitzgerald, State Water Resources Control Board, North Coast Region, 54 p., July1, 2005. Turbidity does not need to be included as an indicator since there is an existing numeric water quality objective for turbidity. Staff acknowledge that it is always possible to obtain more detailed information for certain purposes, but believe that the data and information included is adequate to demonstrate a sediment impairment.

Comment QVIC-31:
"The use of the IBI index score of 18 is appropriate, but the EPT Index, Percent Dominance Index and Richness targets in Table 2.3 should also be applied."

Response:
Thank you for this comment.

Comment QVIC-32:
"Habitat typing data for the Scott River basin should have been acquired and queries run for embeddedness so that in-stream conditions could be compared between watersheds with varying upland conditions."

Response:
See response to QVIC-30.

Comment QVIC-33:
"Because there are no data regarding large wood in streams, discussion of its abundance and distribution are lacking in the Scott TMDL."

Response:
Comment noted.

Comment QVIC-34:

"The final TMDL should specifically describe problems with timber harvest in riparian zones in or above reaches inhabited by coho salmon so that large wood recruitment can be protected as part of waste discharge requirements under the timber harvest planning process."

Response:
Large woody debris recruitment is beyond the scope of this TMDL. However, both the USFS and CDF timber planning processes provide stream buffers with limited harvesting to aid in large wood recruitment.

Comment QVIC-35:
"The Redwood Creek TMDL (U.S. EPA, 1998b) specifies that pool depths in streams larger than 3rd order in size have pools at least 1-1.5 meters in depth, which should be applied to Scott River tributaries. Targets for mainstem Scott River pool depth should be set based on historic accounts and should be at least ten feet based on watershed size."

Response:
See response to QVIC-30.

Comment QVIC-36:
"The Scott TMDL should avoid making references that upper limits, such as 30% fines < 6.4mm, are fully acceptable. Kondolf (2000) showed that this is a level where 50% mortality of salmonid eggs can be expected."

Response:
See response to QVIC-30.

Comment QVIC-37:
"The Scott TMDL does not deal with fine sediment transport and habitat impairment in the lower Scott River, where no data were collected by Sommartstrom et al. (1990)."

Response:
Comment noted.

Comment QVIC-38:
"Discussions of V* data in the Scott River watershed in section 2.4.2.7 are good but the V* should also be included in Table 2.2, with a target value of <0.10."

Response:
See response to QVIC-30. V* is discussed in Section 2.4.2.7.

Comment Q**VIC-39:**
"The work of Knopp (1993) also justifies the use of a target for a minimum median particle size distribution of 37 mm. Median particle size may also become very large in response to increased peak flows related to rain on snow events (Montgomery and Buffington, 1993). An upper limit for salmonid suitability should be adopted into the final Scott TMDL based on U.S. Forest Service studies (Gallo, 2002). Reynolds (2001) used median particle size with an upper limit of 90 mm for optimal size for salmonids and 128 mm as fully unsuitable in the Ecosystem Management Decision Support (EMDS) model."

Response:
See response to QVIC-30.

Comment QVIC-40:
"Sigler et al. (1984) demonstrated that turbidity over 25 nephelometric units (ntu) limited steelhead juvenile growth. The latter threshold should be adopted by the Scott TMDL. Elevated turbidity has been noted as a specific problem in Moffett Creek (Kier Associates, 1999)."

Response:
See response to QVIC-30. With respect to this particular suggestion, it seems that available studies indicate that a single threshold would not be appropriate as a target.

Comment from QVIC- 41:
The TMDL did not use all available water temperature, which hampered examination of cumulative effects and elevation of water temperatures.

Response:
The temperature data analyzed by staff was more then adequate to evaluate current conditions and develop the source analysis. Staff reviewed other data that the commenter has suggested (older USFS data) be incorporated, and found the data has quality control issues. Regardless, the incorporation of the suggested data would not likely change the actions described in the Action Plan. Nonetheless, these data are part of the public record.

Comment QVIC-42:
"The final Scott TMDL also needs to clearly recognize that water temperatures in smaller tributary basins accessible to coho salmon or that feed salmonid refugia in the Scott River canyon are controllable and that they need to meet water temperature requirements of coho salmon."

Response:
The Staff Report clearly shows that stream temperatures are subject to controllable factors. However, the Basin Plan water quality objective for temperature is stated in

terms of natural temperatures, not species-specific temperature requirements. Regional Water Board staff did not evaluate what the expected natural temperatures of the Scott Canyon tributaries might be.

Comment QVIC-43:
"Data from Thermal Infrared Radar (TIR) clearly indicates that water depletion drives water pollution, yet information from that survey was not used to draw that conclusion in the Scott TMDL."

Response:
Regional Water Board staff disagree that the TIR data "clearly indicates water depletion drives water pollution."

Comment QVIC-44:
"Desired future watershed conditions should include riparian zones that approach the natural range of variability in size and height so that thermal buffering and large wood recruitment potential can be protected and improved."

Response:
The desired future watershed and riparian conditions are those that facilitate natural stream temperatures, as is stated in Section 4.4. Large Woody Debris requirements are beyond the scope of this analysis.

Comment QVIC-45:
The TMDL then fails to note that timber harvests have been active in riparian zones, despite availability of USFS and CDF 1991-2002 timber harvest data.

Response:
Riparian timber harvest activities can occur while still supporting natural shade and microclimate conditions, if appropriate considerations are made.

Comment QVIC-46:
"All refugia need to be identified and protected in the Scott TMDL and implementation should follow Bradbury et al. (1995) in protecting these areas as a priority and focusing restoration in restorable areas adjacent."

Response:
Identification of all thermal refugia is beyond the scope of this analysis. Regional Water Board staff believe prioritization of restoration actions is an exercise that should be undertaken by restoration practitioners. See also Response to General Comment 12.

Comment QVIC-47:
"If only about 5.5 of 813 square miles of the watershed were surveyed, that is approximately only 0.6% of the watershed. This percentage should be stated in section 3.2.1."

Response:
Percentage of the mountainous subwatersheds, where the calculated rates were applied, is discussed in Section 3.2.1.

Comment QVIC-48:
"In the public draft, the paragraph that mentions the doubling of road-stream crossing was removed and replaced with a new paragraph stating the Resources Management's (RM) SEDMODL estimate of stream crossings matched well with the RWB GIS estimate, so RM's estimate was used. Sediment calculations do not appeared to have changed. This situation is unclear and confusing."

Response:
The situation described is the result of an error in the TAG draft. Before that draft was completed, staff had sufficient information that the doubling function was not necessary and was not used in the tables. However, the language describing doubling had not been removed from the text. This error was corrected in the public review draft.

Comment QVIC-49:
"So we may have underestimated anthropogenic sediment contributions. Sediment source inventory may be slightly underestimated because some anomalous features that were not large enough to be found on the landslide analysis may have not been counted." (quoted from public review draft of Staff Report, p 3-11).

This may run counter to the RWB's directive (Clean Water Act, Section 303(d) and the associated regulations at 40 CFR §130.7) to include a margin of safety in the TMDL, and hence should be stated in discussions of the margin of safety in section 3.5.4."

Response:
Section 3.5.4 has been revised.

Comment QVIC-50:
"In response to comments on the pre-draft (Kier Associates, 2005b), language was added to this section of the TMDL stating that 21 of the approximately 2500 total miles of streams in the Scott watershed were sampled, which is approximately 0.8 percent. Any embedded assumptions should be stated. For instance, this analysis assumes does not take into account differences in watershed disturbance regimes between watersheds."

Response:

It is assumed that differences in disturbance regimes between subwatersheds are accounted for in the stratified random sampling and is so stated in Section 3.4.2.

Comment from QVIC-51:
The final document needs to reference Bartholow (1989), Essig (1998) and Poole and Berman (2001). Bartholow (1989) demonstrated that air temperature over the stream is by far the most significant driver of maximum water temperature (Figure 19). The Scott TMDL model runs mention that microclimatic effects were considered, but the description of model parameters and assumptions is lacking.

Response:
The comment does not reflect the "best science" understanding of stream heating processes. The most current understanding of stream heating processes is described in Section 4.1 of the staff report, and in the literature cited in that section. Bartholow's 1989 results are based on the results of a model that works based on daily average stream temperature conditions. Bartholow's model is notorious for not calculating maximum stream temperatures well. Essig's (1998) work relies on Bartholow's.

Comment from QVIC-52:
The Scott TMDL states that the timber harvest permit process under CDF's jurisdiction will prevent future riparian damage despite previous studies (Ligon et al., 1999) and experience in the Scott River basin show that that process has not worked previously in this regard. The discussion in the Scott TMDL of modeling of riparian shade included the following: "Our analysis of factors affecting stream temperatures has determined that reductions of stream shade cause increases in stream temperature. Therefore, the California Forest Practice Rules do not ensure that water quality objectives set in the Basin Plan will be met." (p. 4-35).

Response:
The Scott TMDL relies on the existing timber harvest review and regulation process, but not the authority of the California Department of Forestry (CDF). The current timber harvest review process and regulation includes the two general permits recently adopted by the Regional Water Board regulating timber-harvest related discharges: the general waste discharge requirements and general waiver for timber. These regulatory mechanisms build upon and to some degree dovetail with, but do not rely solely upon, CDF's permitting process. Also see Response to General Comment 9.

Comment QVIC-53:
This ignores the effects of riparian timber harvest on large wood recruitment and the implications for aquatic habitat.

Response:
Recruitment of large woody debris is beyond the scope of this temperature TMDL.

Comment QVIC-54:
Graphs for the five wells should be included in the TMDL, or written justification provided as to why they were not utilized.

Response:
Addition of the graphs of the five wells would not result in new understandings or changes to the TMDL Action Plan. The graphs of the five wells are part of the public record.

Comment QVIC-55:
"4.3.2.1 Boundary Conditions: This section contains a typo. The reference to Figure 4.18 should be a reference to Figure 4.19 instead. The reference to Figure 4.19 should be a reference to Figure 4.20 instead.

4.3.2.7 Results and Discussion: This section contains a typo. The reference to Figure 4.20 should be a reference to Figure 4.21 instead."

Response:
The typos have been addressed.

QVIC-56 Comment:
"The statement "Where reaches of the Scott River and its tributaries are providing suitable freshwater salmonid habitat, protection of these areas should be a priority for restoration efforts." (p 5-4) is somewhat helpful, but could be improved by specifically mentioning coho salmon and their coldwater refugia needs."

Response:
The text in Section 5.1.1.1 has been modified.

Comment QVIC-57:
"The Scott TMDL does a fairly good job of outlining the effects of these various watershed processes except for the risk of increased flows due to rain on snow events."

Response:
See Response to General Comment 17.

Comment QVIC-58:
"While the technical portion of the TMDL sets gallery cottonwood forest as the "potential" vegetation for much of the Scott Valley, the proposed draft implementation plan needs to define the steps necessary to achieve that potential."

Response:
See Response to General Comment 12.

Comment QVIC-59:
"The Scott TMDL should recommend that future levee repairs have as a goal creation of a more sinuous channel with added cottonwood and willow trees to meet both long term flood control objectives and the water quality objectives of the TMDL."

Response:
The text in Section 5.1.9 has been modified to incorporate this comment.

Comment QVIC-60:
"Given the degraded state of riparian vegetation in the Scott River basin, we would urge the RWB to use its Clean Water Act Section 401 authority to ensure that bank stabilization projects conducted in the Scott basin incorporate riparian planting, and that no rock-only bank stabilization projects are permitted."

Response:
Regional Board TMDL staff will coordinate with 401 certification staff to ensure that bank stabilization projects adequately address water quality and beneficial uses and are consistent with the available scientific information underpinning the TMDL.

Comment QVIC-61:
"The Scott TMDL needs to specifically address actions that are recommended and those that the RWB staff would oppose when future large floods cause extensive riparian damage similar to January 1997."

Response:
Regional Board TMDL staff will coordinate with 401 certification staff to address this comment as well.

Comment QVIC-62:
"The final Scott TMDL should recommend the use of computer modeling software to involve the community in the creation of positive future scenarios that allow for both conservation and a thriving agricultural economy."

Response:
Regional Board staff support the use of computer models such as the type suggested in the comment, and we encourage the Scott River community to employ such tools as part of TMDL implementation.

Comment QVIC-63:
"The final TMDL should explicitly recognize that the flow trends of recent years are precisely the opposite of those necessary for the recovery of water quality and fish resources. Remedies for flow changes related to watershed conditions and aggradation have been described in previous sections. The final TMDL needs to also recommend that changes in crops from water-hungry alfalfa to high-value dry-farmed species be considered and that implementation of available water conservation measures be instituted by a date certain."

Response:
See Response to General Comment 6.

Comment QVIC-64:
"The RWB should consider, in the alternative, recommending that the California Department of Water Resources conduct the necessary groundwater study because they have previously studied Scott Valley groundwater conditions, the Department has staff with the appropriate credentials for conducting such a study, and they enjoy a degree of trust with Scott Valley residents, having served their water resource study needs over the years."

Response:
See Response to General Comment 6.

Comment QVIC-65:
"Page 5-16 of the TMDL states that "The Regional Water Board requests that the County of Siskiyou, in cooperation with the Siskiyou Resource Conservation District (SRCD) and other appropriate stakeholders, conduct the above mentioned study." That statement should be revised to read "The Regional Water Board requests that the County of Siskiyou, in cooperation with the Quartz Valley Indian Reservation (QVIR), Siskiyou Resource Conservation District (SRCD), and other appropriate stakeholders, conduct the above mentioned study."

Response:
The text of the Staff Report has been changed.

Comment QVIC-66:
" all data used for monitoring and assessment under TMDL implementation should be available as raw data …The Scott TMDL must also specify that all data collected as part of TMDL monitoring should be added to an easily accessible electronic database."

Response:
See Response to General Comment 8.

Comment QVIC-67:
Addition to Basin Plan language under the Topic *Roads and Sediment Waste Discharges.*
"All major land owners should be required to participate in Erosion Control and Monitoring Plans."

Response:
The Basin Plan language giving the Executive Officer the discretion to require plans as needed has been retained.

Comment QVIC-68:
Addition to Basin Plan language under the Topic *Roads and Sediment Waste Discharges.*
"Trend monitoring data need to be specified showing aquatic recovery companion with mitigation and restoration measures and additional abatement actions taken if targets are not met within a specific time period."

Response:
The concerns expressed in this comment are already addressed more broadly in Sections VI and VII of the Basin Plan amendment language. Text has been added to Section 6.2.2 of the Staff Report linking the indicators discussed in Chapter 2 with the parameters to be monitored.

Comment QVIC-69:
Addition to Basin Plan language under the Topic *Temperature and Vegetation.*
"The Regional Water Board encourages the restoration of upland and valley floor riparian zones necessary to reduce sediment and temperature pollution.

The Regional Water Board specifically recommends the re-establishment of cottonwood gallery forest in valley floor riparian zones to provide better shade, channel definition, habitat complexity, and functions such as trapping sediment from flood waters and protecting valuable agricultural land."

Response:
The general issue in the comment appears to be adequately addressed in the current language. The Staff Report has been modified to address the issue of riparian condition goals.

Comment QVIC-70:
Addition to Basin Plan language under the Topic *Temperature and Vegetation.*
"The Regional Water Board recommends the use of conservation easements in riparian zones on agricultural land to allow riparian recovery while maintaining viability of the local agricultural economy."

Response:
Text has been added to the Staff Report acknowledging the value of conservation easements as a tool.

Comment QVIC-71:
Addition to Basin Plan language under the Topic *Temperature and Vegetation.*
"The Regional Water Board recommends long term goals of rearrangement of rip rap in reaches of the Scott River where the channel is simplified and constricted with a secondary objective of providing the river with access to its flood plain to assist in replenishing groundwater."

Response:
The text of the Staff Report in Section 5.1.9 has been changed in consideration of this comment.

Comment QVIC-72:
Addition to Basin Plan language under the Topic *Temperature and Vegetation.*
"The Regional Water Board will act to reduce ground water pumping and depletion where it is found to be limiting recruitment and survival or riparian trees."

Response:
See Response to General Comment 6.

Comment QVIC-73:
Addition to Basin Plan language under the Topic *Temperature and Vegetation.*
"The Regional Water Board shall address the removal and suppression of vegetation that provides shade to a water body through the up-coming Stream and Wetland Protection Policy. The Policy will be a comprehensive, region-wide riparian policy that will address the importance of shade on instream water temperatures and will potentially propose riparian set-backs and buffer widths. The Policy will likely propose new rules and regulations, and will therefore take the form of an amendment to the Basin Plan. Regional Water Board staff are currently scheduled to develop this Policy by 2007, with funding available through a grant from the U.S. EPA."

Response:
The Basin Plan language states that the Regional Board shall develop and take appropriate permitting and enforcement actions to address the issue of streamside shade. The Staff Report calls out the Stream and Wetland Protection Policy as a key step in this process. The proposed language repeats language in Section 5.1.7. Regional Board staff feel that the existing language in the Basin Plan amendment is appropriate on this issue.

Comment QVIC-74:
Addition to Basin Plan language under the Topic *Water Use.*
"The Regional Water Board shall require water users to develop and implement water conservation plans and practices over a ten year time frame, where action is needed to restore surface flows and water quality."

Response:
The Regional Water Board does not have such authority. See, however, response to General Comment number 6.

Comment QVIC-75:
Addition to Basin Plan language under the Topic *Flood Control and Bank Stabilization.*
"All bank stabilization projects conducted in the Scott River watershed shall incorporate riparian plantings, and rock-only bank stabilization projects will not be allowed. Exceptions may be granted, but only occasionally with strong justification."

Response:
This issue is discussed and addressed in Section 5.1.9 of the Staff Report.

Comment QVIC-76:
Addition to Basin Plan language under the Topic *Flood Control and Bank Stabilization.*
"The Regional Water Board shall work with appropriate agencies and stakeholders to develop a protocol for what will occur after a large flood damages flood control structures and property. A goal of the plan will be to find cost-effective means to increase sinuosity of stream channels and re-establish the connection between streams and their floodplains."

Response:
This concept has been added to the text of Section 5.1.9.

Comment QVIC-77:
Addition to Basin Plan language under the Topic *Timber Harvest*.
"The Regional Water Board recognizes that water quality and aquatic habitats in some tributaries may be in such a degraded state that significant watershed rest (time period with limited harvesting) and erosion control efforts (such as road upgrading and decommissioning) must occur before additional large-scale commercial harvest is allowed. In general, wet-weather hauling will not be permissible."

Response:
Comment noted. Regional Water Board staff would need detailed watershed specific data/information in order to consider incorporating the suggested language in future updates. For USFS lands, the concerns expressed can be made part of the MOU with the USFS.

Comment QVIC-78:
Addition to Basin Plan language under the Topic *Timber Harvest.*
"The Regional Water Board staff will consider the following through waste discharge authority as part of timber harvest review: limiting riparian harvests to allow large wood recruitment for coho and maintaining near stream microclimate; reducing activities on unstable lands, reducing road densities, near stream roads and crossings; and returning forest conditions in the rain-on-snow zone to levels that reduce the risk of increased peak discharge."

Response:
Generally speaking, limiting riparian harvesting, reducing activities on unstable areas, and reducing near stream roads and crossings are already part of the Forest Practice Rules and the USFS planning process. Also see General Response 17 and QVIC 19.

Comment QVIC-79:
Addition to the Basin Plan language under the Topic *US Forest Service and US Bureau of Land Management.*
"The Regional Water Board staff, through waste discharge authority in timber harvest review with the U.S. Forest Service, should consider a moratorium of any timber harvest in the Scott River basin that reduces canopy closure in the transient snow zone."

Response:
This issue will be addressed during development of the MOU with the Forest Service.

Comment QVIC-80:
Addition to the Basin Plan language under the Topic *US Forest Service and US Bureau of Land Management.*
"The Regional Water Board shall require that the USFS provide a study demonstrating forest regrowth and return to stand conditions (multi-tiered canopy) that lessen the risk of un-naturally high peak flows to prevent frequent flood damage to stream channels in the Scott River watershed."

Response:
This issue will be addressed during development of the MOU with the Forest Service.

Comment QVIC-81:
Addition to the Basin Plan language under the Topic *US Forest Service and US Bureau of Land Management.*
"The Regional Water Board staff shall consider withholding approval of timber harvests that substantially reduce the canopy in the lower Scott River watershed until the

Redwood Sciences Laboratory study results on BMPs is released and it is demonstrated that USFS BMPs have protected water quality."

Response:
This issue will be addressed during development of the MOU with the Forest Service.

Comment QVIC-82:
Addition to the Basin Plan language under the Topic *Siskiyou RCD and Scott River Watershed Council.*
"The Regional Water Board shall require that all water quality or trend monitoring studies conducted by the SRCD, SRWC or their consultants provide raw data, along with summary data and reports."

Response:
The text of Chapter 6 has been changed to address data sharing concerns.

30. Rudy Ramp (RR)

Comment RR-1:
"I ask the WQCB to require enforceable time-specific standards in the implementation of the Scott River TMDL."

Response:
See Response to General Comment 1.

Comment RR-2:
"A temperature related issue has to do with ground water pumping. Fish advocates believe that to tackle stream temperature issues will require better monitoring of the impacts ground water pumping. For starters, the WQCB must gather data to illuminate the connection between ground water pumping, streamflow and temperature."

Response:
Regional Water Board staff agree that the interaction of surface water and groundwater must be understood and, if need be, addressed. The Implementation Plan includes a study of surface water and groundwater interaction.

Comment RR-3:
"The WQCB must hold firm on the county developing a process that is a "grading ordinance" or a functional equivalent."

Response:
See General Comment 7.

31. Sandy Bar Ranch and Nursery (SBRN)

Comment SBRN-1:
"California State Water Code Section 13242 requires specific actions to achieve water quality objectives, a time schedule and a plan for monitoring compliance. I would like to see the WQCB fulfill it's duty assessing the effects of groundwater pumping and roads building and maintenance on water quality in the Scott River, and apply this data towards the implementation of mandatory regulations that will improve the water quality of this impaired watershed."

Response:
See Response to General Comments 1 and 6.

32. Santa Rosa Public Workshop (SR)

Comment by Jeff Fowle:
Comment SR-1:
"Whatever the implementation and however it is adopted, it must be cognizant of multi-species and other beneficial uses. A flag was raised. If we focus on one species or one water quality, we run the risk of adversely affecting another species."

Response:
The Basin Plan is based on meeting water quality standards, including protection of water quality to support beneficial uses and comply with water quality objectives. The Basin Plan is not species-based but supporting beneficial uses, including a variety of water-dependent species, is the purpose of all Basin Plan objectives: it is not myopic in this sense.

Comment by Peg Boland:
Comment SR-2:
"Therefore, we need to have the flexibility to do treatments that temporarily reduce shade with the idea in the future there would be bigger and better trees and more shade, and we could minimize the probability of wildfire."

Response:
See Response to General Comment 19.

Comment by Rebekah Sluss:
Comment SR-3:
"We'd like to assist with monitoring and be party to the MOU's between federal agencies and the RWB."

Response:
This is a policy issue for the Regional Water Board to consider.

Comment by Phil Smith:
Comment SR-4:
"The Quartz Valley should be involved in the MOU with the federal agencies within the Scott River Watershed. The federal trust responsibilities to the tribe provides for our involvement on the federal level and the state's environmental justice program will allow the tribes to assist in developing the MOU. We also ask the Board involve the Quartz Valley tribe in developing implementation and monitoring for the Scott TMDL."

Response:
See Response to General Comment 3 and the response to Rebekah Sluss above.

33. Sari Sommarstrom (SSA)

Comment SSA-1:
"Identifying 65% of the current loading sources in your "miscellaneous" category of "EMIHA" (table 3.23) indicates that insufficient research was done to further split this category out into useful and identifiable sources. This large lumping of 202 tons/sq mi/yr of Streamside Sediment Delivery under EMIHA creates a huge uncertainty into how this source is seen on the landscape. If we cannot envision its sources, then we cannot solve the problem. No other sediment TMDL that I've seen has such a large "mish mash" category."

Response:
Sections 3.1.6 and 3.4.3 have been rewritten to provide more detail. Also see Response to General Comment 15.

Comment SSA-2:
"Old aerial photos (1993 & 1998) were apparently used to help extrapolate projections of sediment problems to the entire watershed. Guesstimates were made by staff unfamiliar to the landscape's history as to the cause of apparent sediment sources. A more useful approach would have been to work with the TAG looking at this data before staff made its conclusions."

Response:
Comment noted. Study plans describing Board staff's approach were developed and shared with the TAG. In addition, the South Fork Pilot Study was prepared in response to TAG requests. The concern about extrapolation to the entire watershed would presumably apply to the SEDMODL results, which were developed to address one element of the sediment source analysis – delivery from road surfaces and road cuts. See

response to JF-10 for additional discussion on this. The streamside sampling scheme, based on stratified random sampling, was presented and discussed with the TAG, and included the entire watershed in the sampling.

Comment SSA-3:
"Trend data showing improvement in the percent 0.85 mm sediment composition of the mainstem are brushed aside (and not even mentioned at the Yreka Workshop on 10-18). This finer grain size is the first to mobilize with bedload movement if the incoming sources are reduced. The larger grain sizes (e.g., 6.4 mm) take more energy and thus longer to move out of the system. In addition, the "% fines" indicator is only a percentage: when one category gets smaller, then other categories will increase in their percentage. The D_{50} indicator may be a better one to use, as a result."

Response:
The improving trend in the 0.85 mm fraction is discussed in parallel with the discussion of the 6.4 mm fraction in Section 2.4.2.5, and the summary conclusions for both are presented in Table 2.5. While the comment regarding mobilization is noted, staff observations indicate that the fraction less than 6.4 mm is still highly mobile as evidenced by observed changes in distribution during summer low flow periods. The percent fines were used because of the relationship presented in literature on this subject of a linkage between these fractions and effects on salmonid spawning success. The D_{50} indicator has been considered for use as an indicator, and it may be appropriate to include this as well in the indicator list.

Comment SSA-4:
"The Report does not identify what data gaps and information are needed to better understand sediment sources (natural and accelerated) in the watershed."

Response:
Specific identification of data gaps would have been useful, but this was not done in the TMDL study, which was done at watershed level. Public comments have assisted to some degree to identify such gaps. Data gaps are not the same in all areas, however, and identification will continue in the implementation phase on a local and subwatershed level.

Comment SSA-4a:
"No priorities are provided to help target solutions. Again, how can we target the 65% EMIHA?"

Response:
See Response to General Comment 15.

Comment SSA-5:
"The models used do not account for the significant historic alterations to the mainstem channel by the 5+ miles of dredger tailings, which affect groundwater recharge and channel stability for many miles downstream."

Response:
A restoration plan has been developed, and a pilot project completed, which demonstrates that restoration of the dredger tailings is feasible. Efforts to continue the project are ongoing. Regional Water Board staff assumed that these actions will be completed when developing the estimates of potential vegetation conditions.

Comment SSA-6:
"No mention is made that your description of current temperature conditions from hobotemp data and the FLIR data were based on surface or near surface temperatures during the summer. However, juvenile coho salmon – the sensitive beneficial use that is being targeted here – rear in the bottom of pools, where the temperature is cooler due to thermal stratification or subsurface inflow. A major disjunct exists here between your data and the problem description."

Response:
The stream temperature data collected in the Scott River using continuously monitoring data loggers (such as hobotemps) represent overall temperature conditions of the river. These data are collected using a well-established methodology designed to ensure data quality. The data loggers are deployed in a well-mixed location, typically not at or near the surface.

Regional Water Board staff measured temperatures at the top and bottom of the water column at five locations to evaluate the validity of the FLIR data. The results showed a range of differences from 0.3 – 1.0 C^o, with a mean of 0.6 C^o. These are not significant differences in the context of how the FLIR data was used (described in section 4.2.4).

Juvenile salmon rear in areas that provide suitable habitat conditions. In many areas of the Scott River watershed thermal refugia are the only habitats that provide suitable conditions. This fact does not refute the impairment, but rather supports the argument that beneficial uses are not being supported.

Comment SSA-7:
"The presumption is made that the warmest reaches of the entire stream system – near Fort Jones – should be coho rearing habitat. This expectation overshadows all of the other reaches of the system where coho are currently rearing and surviving – in the upper westside tributaries."

Response:

Regional Water Board staff have not presumed the entire Scott River Watershed will provide coho rearing habitat. Rather, we have compared existing temperature data against criteria to determine whether the beneficial use is supported. Because the beneficial use is not fully supported, additional investigation was required to determine if the Water Quality Objective for temperature was met.

Comment SSA-8:
"If the RipTopo model has been peer reviewed as Dr. Gill told me in an e-mail, then please tell us who the reviewers were and what their comments were. It will help build credibility for your results. The model's resolution does not seem to pick up the narrow band of willows (primarily sandbar) presently getting established along most of the mainstem, even where you imply that the groundwater levels are too low to support riparian."

Response:
The RipTopo model was developed as part of a PhD dissertation, and was reviewed in that context. Regional Board staff also have contacted the authors of the model, and were advised that applied research work using RipTopo will be submitted for publication to a journal that utilizes peer review. In addition, the TMDL analysis was subjected to peer review through the University of California as required by state law. These comments and staff responses are included as a new appendix to the final Staff Report.

The RipTopo model was not used to depict a desired condition for vegetation along the mainstem. The Heat Source model was used to develop a depiction of current and desired vegetation conditions along the mainstem. The narrow bands of willows noted in the comment were represented in the current condition vegetation depiction.

Comment SSA-9:
"What are the "natural receiving water" temperatures of the Scott River system? You need to take a look at the temperatures of Wooley Creek, for example, of what an inland watershed that is "unmanaged" naturally produces."

Response:
Natural receiving water temperatures are defined in the glossary as:

> "The water temperatures that result when the environmental factors that influence stream temperature have not been altered by human activities."

Because stream temperatures are reach-specific, the temperatures of Wooley Creek are difficult to use for evaluating the natural receiving water temperatures of the Scott River and tributaries.

Comment SSA-10:
"The Report does not identify what data gaps and information are needed to better understand temperature background and artificial heating sources in the watershed."

Response:
Sections 4.5 and 4.6 of the report identify some data gaps and recommendations for additional study and future actions in relation to temperature concerns.

Comment SSA-10a:
"No priorities are provided to help target solutions."

Response:
This process leaves the priorities to be set at the local level, rather than dictating these priorities in a top-down manner.

Comment SSA-11:
"For example, a Grading Ordinance is recommended yet the Sediment findings did not identify sites on private land not already regulated by WDRs that are causing problems. And who do you expect the Grading Ordinance to pertain to? Residential lands? All new roads? Farming practices? The uncertainty of your expectations is creating unnecessary stress locally."

Response:
The text of the Basin Plan amendment has been changed to refer to land-disturbing activities that could be addressed via an ordinance or other County-enforceable mechanism. While the term 'grading ordinance' is widely used in other counties, the use of the term in this report has generated significant concern and reaction. The intent is to address sediment delivery from activities that disturb soil, such as excavation, new construction, cut slope preparation, and fill slope preparation. Such activities are widely acknowledged to have the potential for erosion and sediment delivery to watercourses, even though such activities were not explicitly considered in the sediment source analysis (with the exception of roads). Some sediment-generating activities are covered by existing permits, including activities associated with timber harvest, and were not intended to be considered as part of this action.

Comment SSA-12:
"Insufficient time and process were provided for the Technical Advisory Group (TAG) to discuss and resolve the findings of the Technical Report and the recommendations of Action Plan with staff."

Response:
As noted in response to General Comment number 3 above, there has been great effort to reach out to interested persons in this process over the last year and a half, including six weeks for formal public comment. Nevertheless, Regional Board staff would have also liked to have had more time with all the stakeholders, including those participating in the TAG, and apologize for the time limits imposed on this process by the consent decree

schedule timelines. The proposed actions in the Action Plan reflect in part the time constraints imposed on the process by being less prescriptive and more process-oriented, allowing time for further discussion and refinement of approach and further exploration of the particulars of actions needed to improve water quality.

34. Siskiyou County (SISC)

Comment SISC-1:
"There continues to be controversy that the information and data gathering, sampling, analysis and methodology, and modeling are still lacking in adequate peer review."

Response:
The Staff Report, including the technical analyses for sediment and temperature, were subjected to a University of California peer review as required by state law. The results of this review are included in a new appendix to the final Staff Report.

Comment SISC-2:
"The NCRWQCB should review the extensive studies that have already been done on the impacts of suction dredge mining on water quality and fisheries before doing any new studies."

Response:
The intent of the language in the Action Plan was not to suggest that the Regional Board would undertake original field investigations, but rather that existing information about this topic would be compiled and reviewed. If the County has particular references or contacts on this subject, please do not hesitate to submit them.

Comment SISC-3:
"A complete and comprehensive economic impact analysis must be done."

Response:
See Response to General Comment 14.

Comment SISC-4:
"Repair and control of legacy sediment waste discharge sites is dependent upon grant funding being made available to complete such projects."

Response:
See Response to General Comment 4.

Comment SISC-5:

"The County strongly suggests that the Action Plan state that the policy of the RWB is to encourage and build upon ongoing, proactive restoration and enhancement effort in the watershed to the greatest extent possible."

Response:
See Response to General Comment 1.

Comment SISC-6:
"the Action Plan should state that the County, landowners, and other entities cannot be held individually responsible for remediation of legacy sediment waste discharge sites and for the effects and impacts from major natural events such as fire and flooding."

Response:
See Response to General Comment 5.

Comment SISC-7:
Suggested changes to Action Plan, Table 4 under the Topic *Roads and Sediment Waste Discharges.*
"The Executive Officer shall, working together with local stakeholders, develop draft criteria for determining when an ECP is required and develop a draft list of water discharge sites that may need an ECP. Owners may appeal to the Regional Water Board…Guidance for satisfying ECP and MP requirements, including using available existing plans from alternative sources, shall be prepared by [insert date on year from EPA approval]"

Response:
Draft criteria development is a region-wide issue, and would be conducted by Board staff with input from stakeholders region-wide. Regarding waste discharge sites, this process normally proceeds from a request to prepare an ECP, which leads to development of a list of sites, which are then prioritized for action. These tasks normally fall to the responsible party of whom the request is made. This approach is reflected in the items included in the action for Siskiyou County MOU with the Board with respect to roads. Please note that the criteria development timeline in effect does not apply to the MOU. In effect, the Regional Board considers the County's roads network in the Scott watershed to be extensive enough to warrant development of a plan to manage sediment delivery from these roads. Since the timeline is a Board staff timeline, and since this is an issue of region-wide significance, the timeline has been retained at 2 years from approval.

Comment SISC-8:
Suggested changes to Action Plan, Table 4 under the Topic *Roads*
"…in developing the MOU the RWB shall work with the County to develop time-lines that take into consideration county resources and budget and county obligations to provide and maintain safe and drivable county road"

Response:
The Staff Report acknowledges that constraints on responsible party resources are considered in the planning process. We understand that the County has received grant funding to develop a road inventory, and that this work is expected to be completed in early 2008. The MOU timeline, given the additional approvals required before the TMDL takes effect, is estimated to have a completion date of late 2008, which appears to fit well with the availability of inventory results. Also see Response to General Comment 4.

Comment SISC-9:
"We find it both appropriate and beneficial to allow the County to develop its own policy and regulatory framework to address grading, as the County has a long history of promoting conservation and wise land use practices."

Response:
The Regional Board appreciates the detailed information presented by the County with respect to this issue, and looks forward to further discussions on this topic. The County has requested an additional two years (from 1 year to 3 years from Action Plan approval) to address this issue. The text of the Action Plan has been changed to 2 years from Action Plan approval, given that this process appears to be well underway. Reference to an ordinance or other County-enforceable mechanism has been added to the Action Plan. Also see Response to General Comment 7.

Comment SISC-10:
"Water Use: Third Bullet: …[insert date that is two years…]. No other additional changes at this time."

Response:
The action is to prepare a study plan, and 1 year from approval (about two years from now) seems adequate to complete this task.

Comment SISC-11:
Proposed addition to Basin Plan language. "Dredge Mining: Actions: RWB Staff shall thoroughly review the extensive existing studies of the impact of suction dredge mining activities on sediment and temperature loads in the Scott River watershed to determine what additional studies, if any, are required by [insert date].

Response:
See response to SISC-2.

Comment SISC-12:

Addition to the Basin Plan language Topic *Temperature and Vegetation.*
"The RWB shall direct staff to organize a joint task force, consisting of the SRCD, SRWC, Siskiyou County, DFG, RWB, NRCS, landowners, Corp of Engineers, DWR, and USFS to study and explore alternative restoration scenarios or strategies for the mainstem of the Scott River. These scenarios shall consider the current and historical condition of the mainstem, the effects upon restoration from significant past, or legacy, modifications to the mainstem, and the effects from cyclical flood and upland fire disturbances, especially catastrophic flooding of the Scott River and its tributaries, and catastrophic upland fires. Feasible scenarios or strategies shall be presented to the SRCD Board of Director, to the SRWC, and to the landowners involved."

Response:
See Response to General Comments 5 and 12.

35. Siskiyou County Farm Bureau (SCFB)

Comment SCFB-1:
"Load allocations apply to sources, while habitat is to be measured toward the objective."

Response:
Excessive sediment loading degrades habitat conditions. In general the instream indicators presented in Chapter 2 relate sediment loading to particular habitat attributes that are affected by sediment loading.

Comment SCFB-2:
Modifications to the channel, by the Army Corps of Engineers, have resulted in a limiting factor for the reestablishment of riparian vegetation for approximately 30 miles of the main stem.

Response:
See Response to General Comment 5.

Comment SCFB-3:
"Objectives for the temperature TMDL are not clear. If each reach of the main stem and the tributaries were assigned an objective based on the average shade value, it would be more effective to monitor and allow for more specific enhancement projects through the implementation phase."

Response:
Effective shade targets are presented in Figures 2.4 – 2.6. These figures allow an individual to evaluate the potential for effective shade given a stream reach's aspect, width, and riparian vegetation. In addition, a new figure has been added to Chapter 4 describing potential tree heights on the mainstem.

Comment SCFB-4:
"While the most critical time period for salmonids was selected for evaluation the corresponding site-specific locations were not the focus of data collection. For accurate monitoring and honest evaluation, site-specific rearing habitat needs to be identified for temperature monitoring."

Response:
The details of the monitoring plan will be decided through collaboration with local stakeholders. See also Response to General Comment 10.

Comment SCFB-5:
"The Scott River TAG should be able to review and comment on the chapters that have not been completed, specifically, chapters 8, 9, 10 and 11. By law, chapter 11, pertaining to Economic Impacts, must be included in the Draft that is presented for public comment. If that chapter is similar in its accuracy as the chapters pertaining to sediment and temperature were, it too will need major adjustment."

Response:
The Scott River TAG has had the opportunity to comment on the complete draft TMDL document. It was released to the public on September 20, 2005 and the comment period ended on November 3, 2005. Chapters 8, 9, 10, and 11 were included in this draft.

Comment SCFB-6:
"When the staff presents the Draft TMDL to the Board, the TAG should also be given the opportunity to address the Board pertaining to the TMDL."

Response:
In addition to the six-week written comment period, the public hearing scheduled for December 7, 2005 will allow for oral comments on the TMDL Staff Report and proposed Basin Plan amendment language.

Comment SCFB-7:
"The NCRWQCB needs to clarify in the Draft TMDL how, without any additional scientific information, estimates of anthropogenic contribution are determined."

Response:
Section 3.4.3 has been rewritten and expanded to clarify this point. The operative term is estimate, and the estimate is based on best available information. See also Response to General Comment 15.

Comment SCFB-8:
"The NCRWQCB should complete a comparison of erosion rates in undisturbed sub-basins versus manmade disturbed basins."

Response:
This would be very complex, considering all the variables, and is not necessary for the TMDL.

Comment SCFB-9:
"While staff indicated that they utilized the "best available information" for the estimates of sediment contributions, it was clear from the August 2nd meeting that they did not search very hard nor contact key agencies for critical information that is readily available."

Response:
Without more specifics as to data or information that was overlooked and that the commenter feels would have been critical to the analysis, it is difficult to respond to the comment in a substantive manner.

Comment SCFB-10:
"The "blanket application" of South Fork data over the rest of the Scott River Watershed, is a gross misuse of information and creates a very inaccurate picture of the true system. There is very little correlation presented in the South Fork Pilot Study between storm frequency and erosion sites. The time period used to accurately date erosion sites should be from review of aerial photography and not from assuming some arbitrary storm frequency period."

Response:
Application of results regarding sediment delivery from road surfaces and cut banks in the South Fork to the entire watershed is not the ideal approach. This approach was used only to estimate some aspects of contributions from roads, and were applied as rates. The application used watershed-wide data on road locations, density, crossings, and locations. Staff observations indicate that road conditions in the watershed are sufficiently similar to road conditions in the South Fork to support the application of rates developed from South Fork road inventory data to the rest of the watershed. If road inventory data generated in other subwatersheds had been made available, which it was not, the study elements related to these aspects of roads could have been more detailed. Nonetheless, in the context of the whole TMDL study, the approach used is sufficient to demonstrate impairment on a watershed-wide basis.

Comment SCFB-11:
"Water temperatures within the range of 14.3C to 18.0C MWAT support healthy coho salmon and the TAG draft TMDL should reflect this understanding.

Response:
See response to TPC2-8.

Comment SCFB-12:
"The TAG draft TMDL needs to describe the specific numeric data that describes known natural receiving water temperatures in the Scott River watershed and describe the range of natural water temperatures found in the Scott River watershed that would be similar to natural receiving water temperatures and also meet water quality standards."

Response:
See response to TPC2-9.

Comment SCFB-13:
"NCRWQCB staff need to review historic photography, especially 1944 photography, to verify natural vegetation predictions made with the stream temperature model."

Response:
See response to TPC2-12, TPC2-13, and TPC2-14.

Comment SCFB-14:
"If the model stated in the Draft is to be used, it needs to be indicated that it is an idealistic view, not realistic. Since affects of natural floods were not considered, the text needs to be changed to state that the Draft model does not portray realistic measures of potential conditions within the Scott River Watershed."

Response:
See response to TPC2-15.

Comment SCFB-15:
"**TEMPERATURE**: Numerous other physical conditions cause decreases and increases in stream water temperatures than those mentioned within the DRAFT. These physical conditions may include extreme air temperatures, distance to watershed divide, channel width, elevation and aspect. Accordingly, loss of streamside shade may not necessarily increase stream water temperatures due to physical conditions that may be controlling water temperatures (Sullivan *et al*, 1990). The Draft TMDL should reflect these well known scientific understandings of heating and cooling of stream water temperatures from well cited papers like Brown (1969), Brown (1971), Caldwell et al, 1991 and Sullivan et al, 1990."

Response:

Air temperatures, aspect, and channel width are accounted for in the model analysis. Elevation and distance to a watershed divide are indicators of other factors such as air temperature and time of travel, which the model takes into account. The TMDL takes into account the best understandings of stream heating processes, as described in sections 4.1.1 and 4.1.2.

Comment SCFB-16:
"TEMPERATURE: During the August 2nd TAG meeting NCRWQCB staff indicated the Section B text describes potential effective shade conditions. The text describes shade value for individual "stream lengths". Limited accuracy in the LANDSAT vegetation descriptions and limited accuracy of the stream model predictions make predictions at the stream length scale in appropriate. NCWQCB staff agreed that the model predictions were not appropriate at the reach scale. The text should be modified to improve clarity and state that the stream temperature model should not be used for reach or smaller scale assessments."

Response:
The text has been clarified.

Comment SCFB-17:
Suggested addition to the Basin Plan language in Table 4 under the Topic *Roads, California Department of Transportation.* "Why not include language "although nothing precludes the EO from requiring the evaluation (of the Caltrans Storm Water Program) prior to this date."

Response:
The suggested additional language would be unnecessary, as the Executive Officer may require Caltrans to address water quality issues outside the framework of the Caltrans Storm Water Program, as is noted at the end of this action item, by reference to the Board's ability to take appropriate permitting and enforcement actions.

Comment SCFB-18:
The commenter suggests changes to the Basin Plan language, Table 4 to include requiring an "evaluation of the potential impact from historic mining activities." He also proposes the following language: "Implement management practices that promote the preservation and restoration of vegetation to the maximum extent practicable."

Response:
See Response to General Comments 4 and 5.

Comment SCFB-19:

Commenter asks the following question regarding the Basin Plan language Table 4, under the Topic *US Forest Service & Bureau of Land Management*: "Does the NRCS, RCD, or the Cooperative Extension need to be incorporated here?"

Response:
Regional Board staff understand that NRCS, the RCD and UCCE focus on private lands, not federal lands. Board staff would certainly support any cooperative efforts that take advantage of available expertise on these issues.

Comment SCFB-20:
Add language to the grazing action that clarifies that 'as-needed' implies 'based on evaluation of the actual or potential threat to water quality.'

Response:
The proposed language is consistent with Regional Board authorities and the mission of the organization, though it doesn't seem necessary to state this in this amendment, since the Basin Plan itself (to which this language would be added) already acknowledges this.

Comment SCFB-21:
The commenter proposes suggested wording for Table 4 under the Topic *Grazing*, including consideration of Range Water Quality Management Plans, group plans, and funding.

Response:
The proposed language additions, while too detailed and specific for Basin Plan amendment language, are relevant to the role of existing programs to address water quality. The Regional Board encourages the development of Rangeland Water Quality Management Plans as a vehicle for addressing sediment and temperature impairments. Experience in implementing the Garcia TMDL shows that these plans have been a good starting point for meeting the planning requirements in the Garcia Action Plan. In addition, Regional Board staff have worked with UCCE staff to modify the plans and the guidance to landowners preparing the plans to better align with Regional Board expectations and requirements. The Garcia Plan has provisions for both individual plans and for group plans. With respect to funding, the Regional Board is involved in a number of grant programs to assist in realizing water quality improvements, as described in Section 10.2 of the Staff Report.

Comment SCFB-22:
"1)Data is presented to indicate potential sediment contribution to the river. However:

a) There is no instream data to correlate effect;
b) Improvement is to be based on riparian habitat, yet it was not evaluated;
c) Reductions are to be made addressing human sediment, while no reduction in natural contribution is suggested;

d) Suggested reductions in sediment are pertaining to "teaspoons," while the naturally occurring contributions are true "loads"; and"

Response:

a) Ample evidence of impairment is shown in Chapter 2, Problem Statement. Correlation between impairment and source on a case-by-case basis is not necessary on the watershed-wide scale of a TMDL.
b) Improvement is to be based not on riparian habitat but on instream conditions, and they were evaluated.
c) Under both Porter-Cologne and CEQA, natural contributions of sedimentare not within the direct purview of the Regional Water Board's authority, though abatement of natural sources can in some circumstances be considered to offset unavoidable human-related contributions.
d) The reference to "teaspoons" is a misconception that has crept into the dialogue and has no basis in what the Regional Board is proposing, neither in the data underpinning the science nor in the regulatory construct. Teaspoons of sediment are not regulated by the existing Basin Plan standards, nor is such a scale of measure remotely relevant to or used under this Action Plan. The "teaspoon" standard of measure has no application in TMDL development or implementation whatsoever, except apparently as a rhetorical device. Moreover, if the commenter is just using the term loosely, not really meaning "teaspoons" but only trying to describe relative scope of the human-related versus naturally generated sediment sources, the Regional Water Board staff disagrees about the implied assessment about the lack of importance of human-related discharges. Regardless, human-related discharges are all the Regional Water Board's has the ability to control under Porter-Cologne. Natural sources are background and context, not the sources to be controlled.

Comment SCFB-23:
"No attention has been given to the dredger tailings."

Response:
The dredger tailings are mentioned in Section 3.4.7. While they are a local and visible problem, the total amount of sediment contributed is small in the context of the watershed as a whole. Local problems including diverting flow underground, sediment contribution during flood, and crowding the river against the opposite bank are recognized and will be addressed in implementation.

Comment SCFB-24:
"The last category of Human Related Sediment labeled "Other" is unacceptable. If accurate and effective implementation and monitoring is to occur, specific locations and causes of the potential sediment contribution must be noted. If it can not be directly associated with a human activity then it must be moved to the Natural category."

Response:
The commenter is referring to Effects of Multiple Interacting Human Activities (EMIHAs) and indicating that any sediment that cannot be directly linked with a specific human activity must be considered to be natural. The existence, and the persistence and impact, of cumulative watershed effects is a well established principle in forestry and land management. Section 3.4.3 has been revised to answer these questions. Also see Response to General Comment 15.

Comment SCFB-25:
"Local Biologists need to be consulted regarding the identification of spawning and rearing habitat in the Scott River Watershed. They will:

- Indicate that "course" sediment from the tailings is more of a limiting factor to rearing habitat as the pools have been filled in during major events; and
- Many of the potential spawning habitats need more fines, and less course material, due to the nature of the river cutting and not filling."

Response:
Through much of the length of the Scott River desired conditions for fine material are not met, as shown in Table 2.5, sections on fines and embeddedness. The delivery of coarse material from the dredger tailings is a problem which cannot be ignored, but data from other reaches suggest that the influx of fine sediment from higher in the watershed overwhelms the coarse tailings sediment within a relatively shore distance downstream. In balance, it appears that the quantity of fine sediment going through the system keeps the level of fines inappropriately high in most areas except for the reach below the tailings. Further study during implementation will bring better focus to this issue.

Comment SCFB-26:
"It needs to be noted which of the measurement were taken in habitat locals.
The hobo temps that were utilized were meant to collect a general picture of the system, not monitor rearing habitat of salmonids."

Response:
All of the sites where Regional Water Board staff collected data are potential habitat for cold water fish. As far as we are aware, all of the temperature data collected by the Siskiyou RCD and US Forest Service are potential habitat sites, as well.

Comment SCFB-27:
"The shade model is based on "closed system analysis" and does not take into account the limiting factors present in watershed (soil type, slope, levee presence, high flows, flood frequency, etc.)."

Response:

The commenter is partly correct. The effects of these events were accounted for by reducing potential effective shade values by 10% in all areas of the watershed with the exception of Scott Valley. The effects of floods on Scott Valley riparian vegetation were taken into account by assuming that at any given time, only 50% of the length of Scott River would have mature vegetation, based on the conclusions of Lytle and Merritt (2004).

Comment SCFB-28:
"The objective stated in terms of % canopy is ambiguous at best; and
Target objectives need to be specific to local (reach, tributary, mile, etc.)"

Response:
No objectives are set in terms of percent canopy. The metric used to quantify stream shade is effective shade, which is used because it is particularly relevant to solar loading, and because it can be easily measured in the field with relatively inexpensive equipment.

Target objectives are discussed in Section 2.5.2.1 and presented in Figures 2.4 – 2.6. These figures present information that can be used at any site to estimate the potential effective shade at that site. Site-specific shade targets are beyond the scope of this analysis.

Comment SCFB-29:
"We highly encourage the NCWQCB to accept the CDF&G's ITP and the SRWC's Strategic Action Plan as the acceptable tools for addressing the impairments."

Response:
The ITP and the Strategic Action Plan have both been acknowledged as addressing issues that overlap with the TMDL. See Table 5.10 of the Staff Report. To the extent that the ITP and the Strategic Action Plan result in water quality compliance, the Regional Board supports them.

Comment SCFB-30:
"Local Biologists need to be consulted regarding the identification of spawning and rearing habitat in the Scott River Watershed. They will: Indicate that temperature is not an issue during spawning, and that rearing habitat, while limited, does exist; tributaries serve predominately as rearing habitat, with a few locals in the mainstem; the mainstem serves predominately as spawning habitat, with a few locals in tributaries."

Response:
Regional Water Board staff agree that temperature does not appear to be an issue during spawning, and that limited rearing habitat exists. Our temperature modeling results indicate that the amount of rearing habitat would greatly increase, even in the mainstem, if water quality objectives were achieved.

36. Siskiyou County RCD (RCD)

Comment RCD-1:
"It appears to us that a likely outcome of you TMDL efforts as outlined in the staff report and draft action plan is that yet another overlapping and redundant regulatory structure will be imposed on our landowners."

Response:
See Response to General Comment 11.

Comments RCD-2, RCD-6, RCD-13:
"our community is confused by the TMDL process and is very skeptical of the Staff Report and Draft Action Plan. They feel that staff has not satisfactorily presented and quantified the causes and realistic solutions to the water quality issues you have identified. We strongly recommend that you extend the comment period by up to five months and hold numerous meetings (not only on technical issues) with our community."

"Therefore we request that language be inserted to provide that the Action Plan is revisited as a Board agenda item periodically until the plan is fully developed by staff and stakeholders and approved by the Board."

"At the workshop in Yreka on October 18, in response to a question from the audience, Catherine Kuhlman said something to the effect that the key was not to meet some arbitrary standard but to put in place programs that continue to move us in the right direction on water quality in the Scott River watershed…While I am sure I didn't capture the exact words Catherine used, I believe this does convey what she said. We submit that this idea should be developed further and included in the final plan."

Response:
The Regional Board is required to provide a 45-day period for public comments. This comment period began on September 20, 2005 and ended on November 3, 2005. The Regional Board is working under the schedule requirements of an EPA consent decree to adopt the Scott TMDL by the end of 2005, and prolonging the process will not allow the TMDL to be adopted by that date. However, the Board recognizes that adjustments may be needed in the future based on practical experience, and the Action Plan was purposely crafted to allow for adaptive management. The Regional Board is committed to working with stakeholders and sovereign governments in the Scott Valley and the Klamath Basin to implement an Action Plan that is responsive to local conditions. The Board recognizes that local information is important to the implementation process and will take that into consideration as it follows through with the provisions of the Action Plan. The effectiveness of the Action Plan will be reassessed in the future and is subject to change based on the findings of those assessments. Reassessment of the Action Plan is addressed in the Action Plan under Section VII. Language has been added to this section

for a yearly report to the Board on status and progress, and for an evaluation of the effectiveness of actions relying on encouragement within 5 years of approval of the TMDL. This and the 10-year reevaluation of the entire TMDL provide a mechanism for assessing trends toward water quality compliance.

Comment RCD-3:
"The affects of historical mining practices do not just affect sediment contribution as referenced in the Staff Report but also limit riparian establishment, width/depth ratios and shade index potential on most of the mined areas. This was not incorporated in either the Staff Report or the Action Plan."

Response:
See Response to General Comment 5.

Comment RCD-4:
"We recommend that you identify and quantify the historical mining effects and irreversible impacts of the Army Corp of Engineers work (for each of sediment and temperature) separately and provide discussion about historical impacts in relation to current human-caused landscape activity."

Response:
See Response to General Comment 5.

Comment RCD-5:
"We feel there should be a third category that separates legacy human-caused impacts from current human-caused impacts when presenting natural and human-caused impacts in Table 2 of the Action Plan as well as table 3.23 of the Staff Report."

Response:
The task of the TMDL study, specifically, is to estimate the proportion to which human-caused sediment delivery, of whatever age, is producing an increase over natural sediment delivery. Staff separated out legacy contributions where possible. Also see Response to General Comment 5.

Comment RCD-7:
"The Staff Report findings do not smoothly transition into the objectives of the Action Plan. We simply have no way to understand or intelligently respond to the 550 tons per square mile sediment TMDL, why the natural sediments are comparatively (as compared to other TMDLs) so low or what is being proposed for the temperature TMDL because there is no visibility at all into how those figures were derived."

Response:

Staff do not concur that "there is no visibility at all in how those figures were derived." Staff have strived to demonstrate methods and the progression of calculations toward the estimates, short of making the Staff Report any more bulky than it is. However, in response to this and other comments, some sections have been expanded with further explanation.

Comment RCD-8:
"The only way we can see to get ourselves and others in the community comfortable with the TMDL standards that are being proposed is for there to be far more in the way of peer review than has previously occurred with our being able to at least observe this process, thereby deriving some comfort in the standards by which you intend to measure this watershed. We recommend the Staff Report and the Action Plan both be peer reviewed and better explained to the community."

Response:
See Response to General Comment 13.

Comment RCD-9:
"No determination of sediment transport duration through the stream system."

Response:
Resources and time were not available to do a sediment budget for the Scott River watershed, nor is a complete sediment budget necessary. The goal of the sediment TMDL study is to estimate the increase over natural sediment delivery produced by human activities past and present.

Comment RCD-10:
"550 tons per year sediment contribution allowed per square mile: A layer of soil as thick as a sheet of paper over one square mile weighs approximately 3,200 tons (5 tons per acre per NRCS). Is one sixth the thickness of a sheet of paper really in excess of the natural contribution in a watershed mostly comprised of slopes 30% or greater as the 550 ton per square mile TMDL concludes? We are concerned that allowable loads are too low, human-caused sources are lumped and undefined and natural sources are likely understated."

Response:
The sediment TMDL presents results as an average over the watershed, as a way to put all the sediment sources on a uniform basis. As noted in the watershed indicator discussion in Chapter 2 and reflected in the elements of the source analysis, the watershed average values reflect the contributions from observable features on the landscape, including roads (and the various aspects of roads that can lead to sediment delivery), landslides, mining features, and bank erosion. Also see Response to General Comments 15 and 20.

Comment RCD-11:
"Is a shade index of 5 attainable in areas that have been permanently degraded by historical mining and channelization work? How is this realistically achievable under the legacy impacted condition of the Scott River throughout Scott Valley? Staff did not discuss how channel stability could be accomplished in order to achieve proposed adjusted potential shade indexes."

Response:
The shade modeling results indicate that an effective shade index of 5 is not achievable in most Scott Valley reaches of the Scott River. Regional Water Board staff acknowledge that restoration efforts, such as the proposed tailings restoration project, may be necessary for compliance with water quality objectives. See also Response to General Comment 5.

Comment RCD-12:
"FLIR data only picks up surface water temperatures. Physical observation and snorkel sampling by RCD staff have found coho salmon successfully over-summering in areas found lethal by FLIR but where water temperatures were actually @ 17 Celsius."

Response:
Regional Water Board staff acknowledge that the FLIR data does not detect all areas of thermal refugia. Although the identification of thermal refugia is helpful, the temperature source analysis does not rely on the detection of thermal refugia in the FLIR data.

Juvenile salmon rear in areas that provide suitable habitat conditions. In many areas of the Scott River watershed thermal refugia are the only habitats that currently provide suitable conditions under currently impaired conditions. Regional Water Board staff visited many Scott River reaches and did not find salmonids or thermal refugia to be common.

Comment RCD-13:
Numerous suggestions for additions to the Basin Plan language.

Response:
The Regional Board has considered the additions to the Basin Plan language suggested by the Siskiyou County RCD. All of the topics contained within the suggestion are addressed in Response to General Comments 3, 4, 11, 12, 13. While the Regional Board does not believe that the additions suggested are appropriate for the Basin Plan language, there is agreement on the importance of public participation and inter-agency coordination.

Comment RCD-14: "The schedule for completion of the implementation actions shall reflect the availability of funding from third party sources."

Response:
See Response to General Comment 4.

Comment RCD-15:
"The Regional Water Board will make every effort to work with landowners, responsible parties and other appropriate local, state and federal agencies to implement the implementation actions within existing on-going restoration and enhancement efforts, thereby avoiding redundant over-lapping efforts as well as additional permitting or other regulatory actions."

Response:
See Response to General Comment 3.

Comment RCD-16:
(From Chapter V. Implementation in the proposed Basin Plan language.) In order to determine the effectiveness of the Scott River TMDL Action Plan, Regional Water Board staff, working with local landowners, responsible parties and other appropriate local, state and federal agencies, shall develop a compliance and trend monitoring plan.

Response:
See Response to General Comment 3.

Comment RCD-17:
Addition to Chapter VII Reassessment in the proposed Basin Plan language:

"Any such review, reassessment and/or revision by the Regional Water Board shall afford landowners, responsible parties and appropriate local, state and federal agencies involved in water issues in the watershed the opportunity to work with staff and address the Regional Water Board directly."

Response:
See Response to General Comment 3.

Comment RCD-18:
Addition to Table 4 in the proposed Basin Plan language under the Siskiyou RCD & Scott River Watershed Council topic.

"Numerous legacy issues affect the Scott River watershed (e.g. the impact of large scale dredge mining in the 1930's and 40's and river channelization/levee work performed by the U.S. Army Corp of Engineers and others in approximately the same time frame).

Landowners will be expected to co-operate with efforts to remediate the negative impacts of these legacy issues. No landowner will be held financially responsible for these remediation efforts.

The implementation schedule shall be dependent on the availability of adequate funding from third party sources."

Response:
See Response to General Comments 4 and 5.

37. Sonoma County Grape Growers Association (SCGGA)

SCGGA-1 Comment:
"We are concerned of the proposed addition to the Basin Plan introductory language on Total Maximum Daily Loads as part of the Scott River TMDL Action Plans. These are two separate issues and question the need to add language to the Basin Plan as part of the Scott River Action Plan. It was not clear in the notification regarding the Scott River item that all areas in the North Coast region could be affected."

Response:
The introductory Basin Plan language proposed as part of the TMDL amendment is declaratory of existing law and without regulatory effect.. There are no new regulations being proposed, no new obligations are imposed on the public, and therefore that part of the amendment does not need to be noticed. However, the introductory language was included as part of the public review draft, so the public had the opportunity to comment on the language. It is intended to make the Basin Plan more user-friendly for both staff and the public, laying out in overview how TMDLs fit into the Basin Plan and existing law and procedures.

38. Sonoma County Sierra Club (SSC)

Comment SSC-1:
"The Sonoma County Sierra Club supports the development of TMDLs and TMDL Action Plans for impaired and threatened rivers and streams…"

Response:
Comment noted.

39. Michael Stapleton (MS)

Comment MS-1:
"The government should not expect private landowners with huge mortgage payments to give up adjudicated waters that is needed to farm their land."

Response:
Comment noted.

40. Timber Products Company (TPC1)

Comment TPC1-1, TPC1-2:
"The source of sediment that could not be directly linked to land management activities was erroneously attributed to "multiple interacting human activities "(MIHA). ie Large and Small Discrete Streamside Features.

"Sediment rates in areas that have little or no management show erosion rates equal or even above areas with management. (See Table 3.15 in the Draft) This fact invalidates the assumption of MIHA that some portion of the sediment in managed sections of the watershed should be attributed to land management. The data does not support the assumption that timber management contributes to these instream sediment sources."

Response:
The approach in these comments is that cumulative watershed effects do not exist and that the only sediment that can be attributed to human activity is that which can be demonstrated to be the result of a particular activity as shown by direct connection with a specific man-made feature. Also see Response to General Comment 15.

Comment TPC1-3
"When the MIHA categories of sediment are placed in the "Natural" sources of sediment, the total percentage of sediment over background levels is only 17%. This is less that what other TMDLs have determined to be a significant impact."

Response:
Staff disagree with the premise of the comment. See Response to General Comment 15 and Chapter 3 of the Staff Report.

Comment TPC1-4:
"The direct sources of sediment related to timber management, specifically road related, is a very small amount compared to background level. The reduction of these amounts is planned to be at levels that are not even measurable by the guidelines in the Draft guidance for preparation of erosion control plans (1 cubic yard). This will result in efforts with costs far in excess of the value received in water quality improvement."

Response:
Commenter seems to count only road-related sediment as attributable to timber management, and then points out that in the Scott road-related sediment delivery is small. This ignores landslides, small and large wasting features, exposed ground that increases slopewash processes, and of course the broader cumulative effects of multiple

disturbances. Established literature and staff experience indicate that while roads are important, they are not the only significant source of sediment delivery associated with timber harvest. See also response to TPC2-3.

Comment TPC1-5:
"Temperature and shade canopy are already being protected in forested areas of the watershed. Shade canopy is arguably higher now than under natural fire regimes due to over 30 years of Forest Practice Regulations and effective fire suppression.

Response:
Comparison of aerial photos taken in 1944 to those taken more recently do not support the commentor's assertion.

Comment TPC1-6:
"Managing the riparian areas, including thinning of forested areas, should be a part of managing for all of the riparian resource values. Large wood, shade, wildlife habitat, hardwoods, and understory vegetation are being managed under the guidelines of the Forest Practices Regulations which include removing some trees."

Response:
Regional Water Board staff agree that management of the riparian zone can occur without affecting stream temperatures, and that stream temperature is just one of the factors that riparian management should account for.

Comments TPC1-7, TPC1-8:
"The implementation plan (Table 4) specifies using existing regulatory programs but allows for significant water board staff discretion for requiring additional planning and inventory. We are left with not really knowing the impacts that could result from the Plan on our road management and grazing programs."

"Delay approving an Implementation Plan until the technical TMDL is accurate enough to direct improvements and corrective actions.

"Delay approving the Implementation Plan until the specific guidelines for erosion control plans and other regulatory programs are developed."

Response:
The Board recognizes that adjustments may be needed in the future based on practical experience, and the Action Plan was purposely crafted to allow it to both work with and build on voluntary efforts, and to provide for adaptive management. The Regional Board is committed to working with stakeholders and sovereign governments in the Scott Valley and the Klamath Basin to implement an Action Plan that is responsive to local conditions. The Board recognizes that local information is important to the

implementation process and will take that into consideration as it follows through with the provisions of the Action Plan. The effectiveness of the Action Plan will be reassessed in the future and is subject to change based on the findings of those assessments. Reassessment of the Action Plan is addressed in the Action Plan under Section VII. See also Response to General Comment 2.

In addition to the above response, the Regional Board believes that the technical TMDL is of a level of accuracy sufficient for the purposes of defining the problem, creating a linkage between sources and impairments, and establishing load allocations that form the basis for an implementation strategy. The current impairments are the result of a number of interacting factors. Modeling these system dynamics with 100% accuracy is not possible due to the complexity of this interaction. However, the load allocations and identifications need only meet a minimum threshold for accuracy to serve as an adequate basis for implementation. The Regional Board believes that this threshold has been met and even surpassed with the level of data collection and analysis performed for this TMDL. The US EPA will be the agency to finally approved the technical TMDL and will assess the level of accuracy of the scientific component. Initial comments from the EPA indicate that the technical analysis goes above and beyond what is needed to establish the TMDL.

Comment TPC1-9:
"A TMDL Implementation strategy should be adopted that certifies that existing regulatory programs are being implemented. Adding additional programs and uncertain requirements is not necessary and only increase the cost of regulation."

Response:
See Response to General Comment 11.

41. Timber Products Company (TPC2)

Comment TPC2-1:
"The NCRWQCB staff should directly respond to comments provided by the Scott River Technical Advisory Group (TAG) and work with the TAG members so that the Scott River TMDL will continue the currently successful watershed restoration on going in the Scott River Watershed."

Response:
As noted at the August 2, 2005 TAG meeting, comments submitted by TAG members on the Public Draft would be responded to in writing. The Regional Board and Board staff look forward to working with all members of the community to successfully implement the TMDL and achieve water quality compliance.

Comment TPC2-2:

"However, many requirements of the draft implementation plan do not encourage or build upon on-going and proactive restoration as claimed by the NCRWQCB (TMDL Page 5-3). As an example, volunteer and proactive efforts have inventoried erosions and aquatic habitat sites and prioritized the fixing of erosion sites improvement of aquatic habitat sites. During our recent TAG meeting, TAG members described to NCRWQCB staff the prioritization of erosion and aquatic habitat sites is key to restoring a watershed. Prioritization focuses limited resources including staff, time and funding to sites that improve water quality the quickest.

Unfortunately, NCRWQCB stated that the TMDL needed to fix "even a teaspoon of sediment" throughout the Contrary to successful on going efforts, this NCRWQCB policy does not recognize that the on going successful volunteer and proactive efforts that do not try to fix every "teaspoon of sediment". The stakeholders in the Scott River watershed firmly believe this is one reason why volunteer and proactive efforts have been successful."

Response:
The Regional Board recognizes the role of prioritization. See General Comment 12 for discussion on this. Also, the commenter appears to have misunderstood Regional Board staff statements at the TAG meeting. Reginla Board staff did not say that even teaspoons of sediment need to be fixed. See response to comment SCFB-22. Regional Board staff acknowledge the usefulness of the concept of de minimus levels of pollutants, though at present there is not agreement on what a de minimus level of sediment delivery would be or should be. This should not be interpreted to mean that there is no level of delivery that is acceptable. In addition, sediment delivery amounts of concern must consider other factors, including the particular setting of interest. Site-specific conditions would be addressed and are addressed through existing processes including the timber harvest review process.

Comment TPC2-3:
"As an example, the NCRWQCB states in the TMDL that the load allocation for road gullying should be 1 tons/sqmi/year or 0.67 cuyds/sqmi/year. Yet in the TMDL Erosion Control Plan guidance the NCRWQCB states "… sediment waste discharge sites that discharge or threaten to discharge less than 1 cuyds/year should not be included in an inventory. Such discharges are often too small to be a significant threat to water quality and should not be the primary focus of sediment waste discharge control efforts" (TMDL Appendix D Page D-2). Since the TMDL load allocation clearly requires 0.67 cuyds/sqmi/year, the TMDL load allocation is requiring that sites "too small to be significant" to be fixed. In other words, the TMDL is requiring in fact that "even a teaspoon of sediment" is remedied throughout the watershed."

Response:
Commenter treats the figure for the average-per-square-mile delivery of sediment from gullies in the TMDL as a per-feature figure to derive the 'every teaspoon' interpretation. The TMDL (Table 3.6) arrives at an extraordinarily low figure for current road-

associated gullying, and says in effect (Table 3.23) that this is good, let's keep it that way.

Comments TPC2-4, TPC2-5:
"However the Implementation Plan of the TMDL requires that sediment be reduced uniformly across the watershed (TMDL Table 3-23). This approach by the NCRWQCB does not prioritize by erosion rates and would represent a significant reduction in effectiveness of restoration efforts in the Scott River watershed."

"If the NCRWQCB wants to continue the successful on going efforts in the watershed, the NCRWQCB needs to describe in the TMDL (TMDL Page 5-2) how restoration and compliance with the TMDL should be prioritized and that on going and proactive programs should focus on larger (> 5 cuyd) biologically significant sites. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments."

Response:
See Response to General Comment 12. While the TMDL is presented as a watershed-scale average, it does not follow that reductions to meet the TMDL would need to be uniform across the watershed.

Comment TPC2-6:
"The NCRWQCB should correct or explain the apparent conflict between a road gullying load allocation and other load allocations that requires 0.67 cuyds/sqmi/year and Erosion Control Plans that consider this very small amount of sediment "too small to be significant"?"

Response:
See response to TPC2-3 above.

Comment TPC2-7:
"Considering the background and success of the TAG members, the specific comments given to the NCRWQCB from the TAG regarding the Scott River TMDL deserve a specific written response before the issuance of the Scott River TMDL to the public. The recommendations of the TAG members were not addressed in writing before the issuance of the Scott River TMDL. During the public review of the TMDL, the NCRWQCB should provide a written response to TAG members regarding their specific comments and concerns."

Response:
See response to TPC2-1 above.

Comment TPC2-8:
"Recommendation #6: Water temperatures within the range of 14.3C to 18.0C MWAT support healthy coho salmon and the Scott River TMDL should reflect this understanding. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments."

Response:
Regional Water Board staff conducted a literature review to determine temperature thresholds for evaluation of Scott River basin stream temperatures (see Carter 2005). Temperature thresholds for 7-DADM were selected from the USEPA document *EPA Region 10 Guidance For Pacific Northwest State and Tribal Temperature Water Quality Standards* (see USEPA 2003) and are presented in Table 2.8. The Region 10 guidance is the product of a three-year interagency effort, and has been reviewed by both independent science review panels and the public. "This guidance describes an approach that EPA Region 10 encourages States and authorized Tribes (Tribes) in the Pacific Northwest to use when adopting temperature water quality standards (WQS) to protect coldwater salmonids (USEPA 2003)." The values in Table 2.8 come directly from the "EPA Region 10's Recommended Salmonid Use and Numeric Criteria" section of their report (USEPA 2003, Table 3 p.25). Due to USEPA recommendation of these criteria and the rigorous review process that they have undergone, the Regional Water Board staff are confident these temperature criteria will be protective of coldwater salmonids.

As is stated on P. 2-27 of the Scott River TMDL "The MWAT is used as the primary statistical measure for interpretation of stream temperature conditions in the summary of stream temperature data in the Scott River watershed." USEPA (2003) states that for many rivers in the Pacific Northwest the 7-DADM is about 3°C higher than the MWAT (USEPA 2003, as cited by Dunham et al. 2001and Chapman 2002). Rather than using the 7-DADMs listed in Table 2.8 and converting them to MWAT thresholds using the 3°C difference suggested above, the Regional Water Board has developed a correlation equation from temperature data within the Scott River watershed. This process was used to understand the relationship between the 7-DADMs and MWATs in the Scott River watershed, and convert the USEPA recommended 7-DADMs to MWATs.

Comment TPC2-9:
"**Natural Receiving Water Temperatures (TMDL Page 5-13):** The TMDL presumes that to "… maintain natural receiving water temperatures, natural shade conditions provided by vegetation must also be maintained"(TMDL Page 5-13). However, numerous other physical conditions may cause stream water temperature to increase above natural receiving water temperatures. These physical conditions include extreme air temperatures, distance to watershed divide, channel width, elevation and aspect (Sullivan *et al*. 1990). Accordingly, loss of streamside shade may not necessarily increase stream water temperatures due to other physical conditions that may be controlling water temperatures. Therefore, it is important to know what "natural receiving water temperatures" are so that these temperatures can be maintained where temperatures currently meet objectives."

Response:
Regional Water Board staff have defined natural receiving water temperatures as such:

> "The water temperatures that result when the environmental factors that influence stream temperature have not be altered by human activities."

Specific numeric data describing natural receiving water temperatures do not exist. Furthermore, numerically defining these conditions is not necessary for interpretation of the water quality objective for temperature.

Comment TPC2-10:
"Recommendation #8: Describe the range of natural water temperatures in the Scott River watershed that would be similar to natural receiving water temperatures and also meet water quality objectives. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments."

Response:
The range of natural receiving water temperatures is the range of temperatures that result when the environmental factors that influence stream temperature have not be altered by human activities.

Comment TPC2-11:
"Recommendation #9: The NCRWQCB needs to state in the TMDL where there is physical empirical evidence that streams temperatures have increased in the forested sub-watersheds of the Scott River. There is no cause-and-effect scientific evidence in the TMDL where stream shade, stream flow, groundwater flow, channel geometry or microclimate have contributed to increased or decreased stream temperatures."

Response:
Studies that present physical empirical evidence showing changes in stream temperatures resulting from human activities are discussed on page 4-4 of the staff report. While none of the studies were conducted in the Scott River watershed, the physical processes that control stream temperatures are the same.

Comment TPC2-12:
"Recommendation #10: TAG member's encouraged NCRWQCB staff to review historic photography, especially 1944 photography, to verify natural vegetation predictions made with the stream temperature model. NCRWQCB staff indicated they would review historical photography. Review of aerial photography should include not only 1944 photography, but sequences of photography so the TMDL reflects the <u>naturally dynamic change in stream shade</u> between 1944 and the present. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments."

Response:

Regional Water Board staff reviewed 1944 aerial photography to evaluate the validity of the estimates of potential shade conditions developed as part of the temperature source analysis, as requested. The current request to expand the review of aerial photos through the current time period is problematic because increasing levels of disturbance since 1944 prevents the evaluation of natural conditions.

Comment TPC2-13:
"Recommendation #11: TAG members shared with the NCRWQCB staff that review of historical photography has indicated that natural vegetation patterns and streamside canopy was far less in historic photos (1944) than currently exists along many of the stream channels in the Scott River watershed. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments."

Response:
Much of the Scott River watershed was heavily impacted by human activities by 1944. However, other areas were apparently undisturbed in 1944. Regional Water Board staff reviewed aerial photos of relatively undisturbed areas to evaluate whether predicted potential shade and vegetation conditions are reasonable. Regional Water Board staff concluded that the predictions are reasonable, and are supported by the 1944 aerial photos. The topic is discussed on page 4-13 of the staff report.

Comment TPC2-14:
Recommendation #12: NCRWQCB should review this historical photography and state in the TMDL why historical photography of natural vegetation would be different than vegetation predicted by the stream temperature model? This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments.

Response:
Please see response to comment TCP2-13.

Comment TPC2-15:
"Recommendation #13: During the recent TAG meeting, numerous TAG members asked the NCWQCB staff to modify text in the TMDL to indicate the model is an idealistic view. Goals for stream channel and stream shade should reflect natural episodic effects of flood events. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments."

Response:
Regional Water Board staff disagree that the depictions of potential vegetation conditions do not reflect natural episodic effects of flood events. The effects of these events were accounted for by reducing potential effective shade values by 10% in all areas of the

watershed with the exception of Scott Valley. The effects of floods on Scott Valley riparian vegetation were taken into account by assuming that at any given time, only 50% of the length of Scott River would have mature vegetation, based on the conclusions of Lytle and Merritt (2004).

Comment TPC2-16:
"Recommendation #15: The NCRWQCB should review results of these studies and possibly other cause-and-effect studies to evaluate the apparent erroneous projections from stream temperature models proposed in the TMDL. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments."

Response:
Timber Products Company's use of data to monitor the effects of their management is laudable. The data presented appear to support their assertion that recent near-stream timber harvest activities have not significantly affected stream temperatures. Without incorporating information about coincident changes in other controlling factors the information is not conclusive. The information does not indicate whether the removal of vegetation resulted in a change in solar radiation reaching the stream surface or alteration of microclimate, thus the information does not refute the conclusions of the Staff Report. Regional Water Board staff encourage Timber Products and others to review the findings of the State of Oregon Independent Multidisciplinary Science Team's report titled *Influences of Human Activity on Stream Temperatures and Existence of Cold-Water Fish in Streams with Elevated Temperature: Report of a Workshop* as well as the Summary Report of the CMER/RSAG Temperature Workshops, developed for the Washington Department of Fish and Wildlife. Both of these reports summarize the state of knowledge in regards to stream temperature influences in forested stream settings, and were developed by interdisciplinary groups drawn from academic, regulatory, and commercial forestry settings. The findings in these two reports are consistent with the conclusions of the temperature source analysis presented in the staff report.

Comment TPC2-17:
"Recommendation #16: The TMDL also claims that the current California Forest Practice Rules do not ensure that water quality objective (temperature) set in the Basin Plan will be met (TMDL Page 4-35), this statement should be revised to reflect the results of cause-and-effects studies. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments."

Response:
Regional Water Board staff stand by the findings of the staff report. While it is true that reductions in near-stream canopy can occur without reducing effective shade (increasing solar radiation), the California Forest Practice Rules do not ensure that that will be the case, nor do they ensure that any decreases in effective shade that result from near-stream harvest will be insignificant.

Comment TPC2-18:
"Recommendation #17: The NCRWQCB should describe in the TMDL where and when stream temperatures have increased above natural receiving waters? Currently there is no empirical evidence in the TMDL that shows historical or recent increases in water temperatures above natural receiving water temperatures? This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments."

Response:
Stream temperature modeling conducted as part of this analysis clearly shows temperatures have increased historically. Empirical data documenting this increase are not available because no data was collected before widespread changes took place. In the absence of empirical evidence, modeling provides the best approach to understanding the effects of human activities. Regional Water Board staff encourage all stakeholders to consider the results of scientific investigations from areas outside the Scott River watershed.

Comment TPC2-19:
"Recommendation #18: If NCRWQCB staff statement that "any streamside vegetation that may contribute shade shall not be allowed" is accurate, the NCRWQCB needs to explain why this statement conflicts with results of cause-and-effect studies that have found no increase in water temperatures following timber harvest in a forested watershed. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments."

Response:
Regional Water Board staff believe we were misunderstood, and deny making the statement attributed. The commenter should refer to response TPC2-16.

Comment TPC2-20:
"The TMDL also needs explain or correct why requirements in the TMDL (Implementation Plan Page 14) conflict with results of cause-and-effect studies that have found no increase in water temperatures following timber harvest in a forested watershed."

Response: Regional Board staff believe that the commenter is referring to the Temperature and Vegetation topic in Table 4 of the basin Plan language. The actions for this topic are not requirements, but rely on encouragement of ongoing activities with respect to parties responsible for vegetation that shades water bodies. Please also note that parties conducting timber harvest activities are considered under a separate topic.

Comment TPC2-21:
"The TMDL should reflect these well known scientific understandings of heating and cooling of stream water temperatures from well cited papers like Brown (1969), Brown (1971), Caldwell et al, 1991 and Sullivan et al, 1990."

Response: See response to TPC2-9.

Comment TPC2-22:
"Recommendation #21: The NCRWQCB should modify the text in this section to improve clarity and state that the stream temperature model should not be used for reach or smaller scale assessments. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments."

Response:
Regional Water Board staff agreed to, and made, the language change in relation to the stream shade modeling results. Regional Water Board staff have demonstrated that the use of the stream temperature model at a reach scale is appropriate, as indicated by the calibration and validation results.

Comment TPC2- 23, 24, 25, 26, 27, and 29:
"Recommendation #22: The NCRWQCB needs to clarify in the TMDL how without any additional scientific information estimates of anthropogenic contribution were determined. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments.

Recommendation #23: The NCRWQCB should complete a comparison of erosion rates in undisturbed sub-basins versus manmade disturbed sub-basins. Results should be stated in the TMDL and Load Allocations be based on these results. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments.

So the mean (total contribution in tons/number of reaches) amount of sediment for undisturbed (natural) and disturbed (natural and human related) for each unique geologic type was calculated. The mean for all geologic types was also calculated. The results indicate that for all geologic types the amount of sediment found along undisturbed natural reaches was 1,187 tons and 1,273 tons along disturbed reaches or a 7% increase along disturbed reaches. In geologic types typically found along forested stream reaches, in granitic based stream reaches mean sediment amounts were 37% less along disturbed reaches than found along natural reaches. In sedimentary/metamorphic reaches mean sediment amounts were 57% less along disturbed reaches than found along natural reaches. This simple review of the NCRWQCB own data indicates that the hypothesis proposed in the both the South Fork Pilot Study and TMDL are not supported by empirical scientific measurements in the Scott River watershed.

Recommendation #24: Unless additional field data is available and presented in the TMDL, sediment sources that cannot be linked to a specific cause-and-effect should not be attributed to land use based only on the fact that land use has occurred above the site. Specifically, unless NCRWQCB staff can demonstrate cause-and-effect relationships of anthropogenic erosion upslope to erosion measured in stream, references to "EMIHA" Load Allocations for Sediment should be associated with natural erosion in Table 3.23.

Recommendation #25: The method of assigning estimates of sediment contribution needs to be better described in the TMDL. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments.

Recommendation #26: The TMDL needs to describe how were the estimates made? Were field measurements taken upslope and were the amounts of erosion recorded? If so, these data sets should be tabulated in the TMDL.

Recommendation #27: Were anthropogenic features (roads, harvests, homes) in the watershed field measured and reviewed as part of EMIHA measurements? In the field, was sediment observed being delivered from these anthropogenic features? Was the amount of erosion recorded? All of these scientific measurements would be helpful in evaluating the scientific basis for the TMDL.

Recommendation #28: The NCRWQCB needs to develop statistical confidence intervals for the near stream erosion estimates to determine significance of differences between undisturbed and disturbed reach segment data.

Recommendation #29: The NCRWQCB should remove Load Allocations currently associated with human EMIHA erosion and place these Load Allocations under natural disturbances. The NCRWQCB has not presented any empirical field measured data that suggests that erosion found along "disturbed" channels are result of human activities. Rather the erosion rates found along "disturbed" channels <u>is less</u> than natural channels. Accordingly, load allocations from EMIHA should be associated with natural conditions in the TMDL Table 3.23."

Response:
The section on Effects of Multiple Interacting Human Activities (EMIHAs) has been revised in an attempt to provide clearer explanations.

A basic premise in the TMDL study is that effects from human disturbance in a watershed are long lasting and cumulative. The principle and background on this interpretation is presented in Section 3.1.6, where some of the more well established literature explaining the concept is cited and some types of long lasting effects are listed, effects that are observed in the Scott.

A basic premise of the TPC comments is that any sediment delivery that cannot be ascribed to a specific human activity should be considered natural (TPC comments, p.

10): "…sediment sources that cannot be linked to a specific cause-and-effect should not be attributed to land use based only on the fact that land use has occurred above the site." Staff find the cited literature on cumulative effects and findings in the field sufficiently convincing to reject this argument at this time.

Estimation of EMIHAs in the Scott is presented in Section 3.4.3. Estimates are not presented "with certainty" as TPC asserts (p. 9) but are proportions estimated to be within 25% ranges, as explained in the text. Further detailed studies on subwatershed level during implementation may add more detail to interpretation of EMIHAs.

Comment TPC2-28:
"Requirements for reduced stream bank erosion proposed in the TMDL (Table 3.23) will likely cause reduction in the recruitment of stream woody debris. The reduction in stream bank erosion below natural levels would likely reduce stream woody debris levels below natural levels. Accordingly, reduction of stream woody debris below natural levels would likely cause a potential significant environmental impact to water quality and fish habitats."

Response:
Nowhere are there requirements for stream bank erosion below natural levels. LWD recruitment would not suffer under the proposed Action Plan.

Comment TPC2-30:
"Recommendation #31: The South Fork Pilot Study should be part of the TMDL. The pilot study should be placed as an appendix item in the TMDL. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments."

Response:
The South Fork Pilot Study is in draft form and is not currently appropriate for inclusion as an appendix. Because of limitations on data availability and the limited sample sizes available within the South Fork study area to characterize the streamside features part of the source analysis, results for the entire watershed would have had to be applied to the South Fork. This led Regional Board staff to conclude that proceeding to the full watershed analysis was the more appropriate course of action.

Comment TPC2-31, 32, 33:
"Recommendation #32: The correct use of the South Fork Pilot Study data should be to compare to other sub-basins in the Scott River watershed and to develop a scientific based and useful TMDL that will guide restoration in all the sub-basins of the watershed. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments.

Recommendation #33: Based on the NCRWQCB own statements in the South Fork Pilot Study, the extrapolation of road erosion rates from the pilot study to the entire Scott River watershed is not statistically or scientifically supported and appropriate changes to the TMDL should be made. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments.

Recommendation #34: There is little correlation presented in the South Fork Pilot Study between storm frequency and erosion sites. The time period used to accurately date erosion sites should be from review of aerial photography and not from assuming some arbitrary storm frequency period. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments."

Response:
If comparable data had been available from other subwatersheds a comparison could have been done. In addition, data on road characteristics from other parts of the watershed, which exist but were not available to Regional Board staff, could have avoided the need to apply South Fork rates to the rest of the watershed. However, absent such availability, rates developed from the South Fork data were applied watershed-wide. At the level of study of the watershed-wide TMDL, staff believe that this level of accuracy is sufficient to make the decision whether or not impairment exists on a watershed-wide basis, and small to moderate differences would not change this conclusion. As further studies are done in smaller areas during the implementation phase, the degree of impairment, or lack of impairment, can be evaluated more closely on a subwatershed level.

Comment TPC2-34:
"Recommendation #35: With 100% sampling there should not be a need to expand the data. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments."

Response:
The data were not expanded or extrapolated as the commenter states. The sediment delivery documented in the survey was averaged over the miles or road in the survey, a standard and valid use of data.

Comment TPC2-35:
"Recommendation #36: The NCRWQCB needs to review and explain in the TAG draft TMDL why the number of crossings was doubled and how this number was extrapolated. This recommendation was also given to the NCRWQCB on August 12, 2005 as part of my Technical Advisory Group (TAG) member comments."

Response:

The number of stream crossings was doubled in the South Fork Pilot Study for reasons explained in that document. In the TMDL, other data were available and the number of crossings was not doubled (Section 3.1.7, p. 3-10).

Comment TPC2-36:
"Recommendation #37: The NCRWQCB staff should investigate in the field, Feature 92 headwalls, the entire landslide run out area and confluence with Boulder Creek to determine whether this feature is a natural or anthropogenic feature. If field work by NCRWQCB confirms my findings, the TMDL should reflect that this feature as a natural landslide and Load Allocations in Table 3.23 should reflect this change."

Response:
Staff have reevaluated Feature 92 in light of the comment and further information, and this section is revised accordingly.

Comment TPC2-37:
"The NCWQCB staff should either present field collected water temperature that indicate increasing temperatures following timber harvest plans or remove requirements for Temperature & Vegetation on page 14 from the Implementation Plan."

Response:
Table 4, Temperature and Vegetation topic, does not include any requirements, but relies on encouragement of ongoing activities in the watershed to address temperature and vegetation improvements.

Comment TPC2-38:
"The Load Allocation for sediment should guide future restoration efforts in the watershed. Basing Load Allocations on inaccurate and unsupported scientific methods will misguide restoration efforts in the watershed by focusing limited time and resources to hypothetical erosion sources including EMIHA. Please modify the Load Allocation of Sediment (Table 3.23), as suggested in my comments, so that sediment load allocations reflect scientifically supported results of your own stream channel erosion data."

Response:
See previous responses to comments on this subject.

Comment TPC2-39:
"Recommendation #40: The TMDL Load Allocations need to explain or correct why existing road crossing failures (2 cuyd/sq mile), road related gullying (0.67 cuyd/sq mile) and road cut and fill failures (2.7 cuyd/sq mile) that are apparently at such low quantities that are too small to be a significant threat to water quality, need to be inventoried in an Erosion Control Plan?

Recommendation #41: If the existing conditions (0.67 cuyd/sq mile) are too small to be a significant threat to water quality, as stated in the Load Allocation plan (Table 3.23), why would Erosion Control Plans be required when the current existing condition does not pose a significant threat to water quality?"

Response:
See response to comment TPC2-3.

Comment TPC2-40:
"The TMDL should reflect that reduction of stream woody debris below natural levels would likely cause a potential significant environmental impact. I recommend changing the CEQA checklist, as I have described below, to reflect this understanding."

Response:
The TMDL does not recommend reduction of woody debris levels to below natural.

42. University of California Cooperative Extension (UCCE)

Comment UCCE-1:
"The decision to use the early 1900s to establish potential conditions and concomitant focus on shading was arbitrary. Information exists from earlier periods, which strongly contradicts the selected period's potential conditions. While this older information is subjective, the supporting data for the early 1900s is also subjective, albeit less so than the earlier periods. Nonetheless, the earlier information is ignored in the report, and presents a significantly different landscape. The results would vastly differ depending on which potential condition is selected.

> "Public comment (G. Plank) suggested the photographic comparisons of today's conditions with the early 1900 period were not adequately represented because of selectivity of where photos were taken, failing to accurately represent present conditions.
> The selection of the early 1900 period as the potential condition limits the evaluation of the relationship between temperature and shading; thus making shading more prominent as a contributor to temperature (the others being groundwater inputs and flows)."

Response:
The evaluation of shade as a primary factor is consistent with the approach taken to develop temperature TMDLs throughout the Pacific Northwest. Regional Water Board staff is not aware of the information described. These data were not submitted. Other issues related to the use of photos from the early 1900s are discussed in the Response to General Comment 21.

The current Scott Valley riparian conditions were explicitly quantified and accounted for in the development the temperature model. Regional Water Board staff evaluated the expected changes in stream temperatures for a range of vegetation conditions. All vegetation simulations indicate reductions in stream temperature, with the greatest reductions associated with the tallest vegetation.

Comment UCCE-2:
"Unfortunately, groundwater inputs were not thoroughly evaluated due to stated lack of knowledge on their behavior. Flows were also only peripherally evaluated. Peer-reviewed publications on effects of snow pack, snow accumulation and snow melt on flows were not cited, discussed nor evaluated as contributors to temperatures."

Response:
See Response to General Comments 6 and 20.

Comment UCCE-3:
"In addition to the problems associated with the selection of the "potential conditions" I believe the modeling methodology has not been sufficiently ground- truthed to evaluate vegetation in the watershed. Perhaps some ground-truthing was conducted, but the methodology was inadequate and unclearly presented, so as to prevent public review of this process. Thus, significant doubts remain over the validity of the vegetation conditions ascribed in the draft report. Collectively, the initial decision to use the early 1900 period predicated the modeling results to select shade as the focus of temperature pollution. From that, the establishment, growth and maintenance of mature tall trees were the most important factor in attaining temperature compliance."

Response:
The evaluation of potential conditions was based on the best available information. If data or analysis presented in the future suggests new understandings, the TMDL should be modified to take these into account. Regional Water Board staff look forward to future discussions of vegetation potential with the stakeholder community.

Shade has been properly identified as an important factor by Regional Water Board staff. The temperature analysis and conclusions are consistent with the conclusions of other temperature TMDLs developed in the Pacific Northwest, as well as the consensus of the State of Oregon's Independent Multidisciplinary Science Team and other scientists, as described in Section 4.1.1. See also response to comment TPC2-8.

Comment UCCE-4:
"Several additional factors related to tall mature trees in the riparian zone as the preferred condition presented contradictions between the technical analysis and implementation actions. First, the report suggests that due to other factors mature tall trees may only be appropriate or possible in selected and limited areas. Yet the modeling

uses the potential condition (not a limited condition) to suggest shading will bring temperatures into compliance. If the implementation toward potential vegetation conditions were more restricted in area, then the modeling would overestimate the significance of shading.

Response:
See Response to General Comments 5 and 12. Note that for the Scott mainstem, the identified potential condition is on the order of 50% shade, which is in effect a condition that reflects the limitations on establishing and maintaining shade in these reaches.

Comment UCCE-5:
"Secondly, while it is difficult to determine the cause of the loss of mature trees, clearly some of the losses were due to flooding, not a human-caused loss. Some trees were undoubtedly lost during projects to straighten or otherwise "repair" the river due to flooding. In addition, due to damages from flooding, landowners were told to remove trees and woody material to lessen future flood damage, i.e. trees were removed due to potential natural events. The point is that humans should not be required to return existing conditions to their prior state due to natural events."

Response:
See Response to General Comment 5.

Comment UCCE-6:
"Grazing plans to help restore conditions that were altered due to natural events should not be required as it is a response to natural events. Voluntary efforts could be encouraged, and voluntary efforts are ongoing. Requiring landowners to prepare written plans is an additional expense that addresses an issue that has already largely been resolved."

Response:
There is no requirement in the Action Plan for grazing plans. This action places first emphasis on encouraging ongoing activities. Grazing plans may be required on an as-needed basis, where ongoing activities appear inadequate.

Comment UCCE-7:
"Consumptive use (evapotranspiration) of water by mature tall trees of the proposed restoration to early 1900 conditions was not evaluated to determine the net effect of this activity. Modeling suggested that flow had an effect on temperature. Water used by the proposed mature trees would not be available as an input to flow. Thus, shading would provide some reductions in solar radiation, and potentially lower temperatures, but these effects could be offset by reductions in flow due to the trees' consumptive use of water. This offset was not evaluated, thus no one knows whether the net effect of mature tall trees would actually be lower water temperatures."

Response:
See Response to General Comment 21.

Comment UCCE-8:
"The draft report fails to utilize the erosion work collected over a ten-year period by Tom Laurent of the USFS. The work is from the Salmon River and represents the closest conditions to Scott Valley. Draft report assessments and estimates should be compared to values obtained in Laurent's work."

Response:
We are aware of the 10-year project of Laurent, which ended in 2001--
Best Management Practices, Region 5 Evaluation Program Water Quality Monitoring Report, Evaluation of Forest Service Administered Projects Including, Timber Sales, Roads, Prescribed Fire, Mining Activities and Revegetation Activities During 2001 www.r5.fs.fed.us/klamath/mgmt/analysis.html .
It is specifically a study of Best Management Practices and their effectiveness. In the Scott, the TMDL analysis was focused on what has actually happened and is happening in terms of sediment delivery. In the implementation phase it may be appropriate to use the Forest Service work from the Salmon River to set standards.

Comment UCCE-9:
"The plan does not adequately address the economic impacts of the implementation plan on individual landowners. Therefore, landowners are unable to knowledgeably comment on the draft report. Furthermore, the plan does not address impacts to the County of Siskiyou restricting their ability to comment. Public comment said economic costs to individuals and the county would be significant, but they were not adequately addressed in the report."

Response:
See Response to General Comment 14.

Comment UCCE-10:
"Due to other resource constraining regulations and issues, implementation plans should be flexible and non-mandatory, and designed by local planning efforts to integrate watershed-wide resource, economic and societal conditions and concerns."

Response:
See Response to General Comments 3 and 4.

43. U.S. Forest Service (USFS)

Comment USFS-1:
"We want a separate MOU with the Regional Board, rather than a joint one with BLM."

Response:
The intent is to develop separate MOUs.

Comment USFS-2:
"The Regional Water Board and the USFS shall work together to draft and finalize a Memorandum of Understanding (MOU) that shall address sediment waste discharges, elevated water temperatures, and grazing activities within the Scott River watershed. The MOU shall be drafted and ready for consideration by the appropriate decision making body(ies) by [insert date that is 2 years from the date of U.S. EPA approval]."

Response:
See response to USFS-1 above. In addition, as noted in the response to the Klamath National Forest comments, the text of the Action Plan has been changed to state that the items noted in the following comments shall be 'addressed' rather than 'included' in the MOU. From the Regional Board's perspective, it is important that all of the items noted in the following comments be addressed as part of MOU development. The various suggested wording changes are appropriately considered during MOU development. Also see Response to General Comment 4.

Comment USFS-3:
"A date for the completion of an inventory of all priority sediment waste discharge sites and all priority roads on USFS land."

Response:
See response to USFS-2.

Comment USFS-4:
"A description of sediment control practices, road maintenance practices, and other management measures to be implemented by the USFS to prevent or minimize, to the degree reasonable and feasible, future sediment waste discharges."

Response:
See response to USFS-1.

Comment USFS-5:
"A commitment by the USFS, subject to available funding, to complete the inventory, develop the priority list, develop and implement the schedule, develop and implement sediment control practices, implement the monitoring plan, and conduct adaptive management."

Response:
See response to USFS-2.

Comment USFS-6:
"We have no authority to make Riparian Reserves permanent. Designation of these areas and identification of applicable standards are established in the development and revision of Land and Resource Management Plans. The FS currently has no plans to change the existing Riparian Reserve boundaries. If such changes were proposed in the future, the Regional Board would have the opportunity to provide input during the environmental review process."

Response:
See response to USFS-2.

Comment USFS-7:
"A monitoring plan to ensure that the Riparian Reserve buffer widths are effective at preventing or minimizing effects on natural shade."

Response:
The text of the Action Plan and the Staff Report have been changed. The comment is correct in pointing out that the TMDL loading capacity and allocations are for shade.

Comment USFS-8:
"A commitment by the USFS, subject to available funding, to implement the Riparian Reserve monitoring plan and conduct adaptive management."

Response:
See response to USFS-2.

Comment USFS-9:
"Contents Related to Obligation of Funds: Nothing in this MOU shall obligate either the Forest Service or the Regional Water Board to obligate or transfer any funds. Specific work projects or activities that involve the transfer of funds, services, or property among the various agencies and offices of the Forest Service and the Regional Water Board will require execution of separate agreements and be contingent upon the availability of appropriated funds. Such activities must be independently authorized by appropriate statutory authority. This MOU does not provide such authority. Negotiation, execution, and administration of each such agreement must comply with all applicable statues and regulations."

Response:

This wording would be appropriately considered during MOU development. See also response to USFS-2.

44. Robert E. Varga (RV)

Comment RV-1:
"There are some major problems with your so called sediment source analysis in Chapter 3. An example is:
3.2.3 Granitic Substrate and Road-Associated Sediment – The DG Factor
Average annual erosion for the entire road prism in granitic areas was 737 tons per mile, or 149 tons per acre of road. (They cite these values as falling within the range reported by others on sandy loam soils.)
Using the above "scientific" data:

737 tons per mile X 2000 = 1,474,000 lbs. Per mile – loose dry common material weighs about 70 lbs. Per cubic ft.

1,474,000 lbs./70 lbs. Per cubic ft. = 21,057 cubic feet of sediment per mile.

21,057 cubic feet of sediment per mile/5280 = 3.99 or 4 cubic feet of sediment/lineal foot of road.

If the average road prism is 22 feet wide, then every mile of road will loose about 2.2 inches in elevation per year.

Most of the roads in the Scott River watershed were constructed prior to 1970, about 35 years ago. This means that all of the roads that are in granitic areas should now be at least 6-1/2 feet lower in elevation than when they were constructed. A fifth grade student can figure this out and realize that it is a total fabrication."

Response:
This comment has revealed a misquote in the Staff Report of a source of sediment in the GSS and allowed a correction to be made. Below we run through the calculation again with the corrected figure.

First, the commenter assumes "loose, dry common material," at a density of 70 lb/ft^3. However, the road bed is not loose material, except for the surface in places, but is compacted by settlement and traffic and has a density of approximately 1.35 $tons/yd^3$ which is 100 lb/ft^3.

1,474,000 / 100lb per cubic foot = 14,740 cubic feet of sediment per mile

14,740 ft^3 of sediment per mile/5280 = 2.8 ft^3 of sediment/lineal foot of road.

Sommarstrom and others, in the GSS (1990, p. 2-31), performed 23 detailed road surveys in granitic areas in the Scott and arrived at an average of 737 tons per road mile for the entire road prism in granitic areas. In the road prism they included the cut bank, the ditch, and the fill slope as well as the road surface. They attribute 64 percent of the sediment to the cut bank alone (p. 5-3). To the road surface, they attribute 11 tons per acre of road surface (p. 2-31).

The Staff Report (p. 3-11) inaccurately referred to the 149 tons as tons per acre of road surface rather than as tons per acre of road prism, which led to the high rate of road surface erosion pointed out by the commenter.

A recalculation of thickness of road surface eroded annually in the granitic area is as follows:

1 acre = 43,560 sq ft.
11 tons / acre = 22,000 pounds per 43,560 sq ft
43,560 / 22,000 = 2 lb per sq ft. of road surface per year.
1 ft^3 of sediment weighs 100 lb
2 lb per sq ft /100 lb per lb per ft^3 x 1 ft = .02 ft thickness per year = .24 inch per year.
35 yr x .24 inch = 8.4 inches in 35 years.

This rate of road surface erosion is significant, but considering the occasional resurfacing of eroded and failed parts of the road surface, it is reasonable.

Section 3.2.3 of the Staff report has been revised to reflect this recalculation.

Comment RV-2:
"Why did the TMDL staff decide that the conditions in the early 1900's should be used as a base for preferred river conditions?"

Response:
See Response to General Comment 21.

45. Keith Whipple (KW)

Comment KW-1:
Scott TMDL Action Plan places too much regulatory burden on landowners.

Response:
See Response to General Comment 11 and 14.

46. Yreka Public Workshop (YRK)

Comments by Jim Depree - (Siskiyou County natural resource policy specialist):

Comment YRK-1:
"We suggest you use the language on page 5.9 of the staff report where you say "in developing the MOU, the Regional Water Board shall work with the county to develop timelines that take into consideration county resources and county obligations to provide and maintain safe and drivable county roads." We'd like that language to be in the Action Plan."

Response:
See Response to General Comment 4.

Comment YRK-2:
"Concerning roads and the groundwater study, we have a concern about flood events and fire, that are a given, how are those taken into account in the TMDL? It would not be cost efficient to spend resources where a natural event could wipe that out. We have to incorporate that. Also, to integrate the Action Plan with existing permitting processes, as you've stated you would do."

Response:
See Response to General Comments 5, 11, and 12.

Comments by Wayne Virag – (Siskiyou County Planning Director):
Comment YRK-3:
"We encourage and welcome the Board's acceptance of this draft document because I think it would be far superior to trying to foist a grading ordinance on a public or a Board that would absolutely resist it."

Response:
See Response to General Comment 7.

Comments by Marcia Armstrong (Siskiyou County Supervisor):
Comment YRK-4: "I request that a thorough economic analysis, reflective of the full breadth and depth of economic impacts, particularly as applies to agriculture in Siskiyou County, be prepared."

Response:
See Response to General Comment 14.

Comment YRK-5:
"A 300 ft buffer accounts for more than 35% of total irrigated land in Scott Valley – this would be a significant economic impact."

Response:

The Action Plan does not require 300 ft. buffers in the Scott Valley.

Comment YRK-6:
"Although it is not entirely clear what actions and methods of compliance will be required of landowners under the TMDL, it is likely that the foreseeable economic impact could be very significant."

Response:
See Response to General Comments 2 and 14.

Comments by Bill Krum - (Siskiyou RCD): (Slide show)
Comment YRK-7:
"We have the programs in place to address the TMDL issues, please make this clear in your Action Plan."

Response:
The Regional Board recognizes the effectiveness of the ongoing efforts in the Scott River watershed to address the sediment and water temperature impairments. While not put directly into the Action Plan, some of these efforts are recognized in the staff report for the Action Plan. The Incidental Take Permit with CDFG, the Strategic Action Plan, and the Coho Recovery Strategy are all described in the staff report. However, there are other actions the Regional Board believes need to take place in order to achieve the goals of the TMDL that are not covered by other programs. For example, the request to develop a groundwater study is not included in any other current program the Regional Board is aware of.

Comment YRK-8:
"The feasibility of this work is contingent on funding. There's been a lot of cooperation, and it will continue. The money has not come from this valley; it has come from other funding sources."

Response:
See Response to General Comment 4.

Comments by Chris Quirmbach (representing timber interests):
Comment YRK-9:
"The source of sediment that could not be directly linked to land management activities was erroneously attributed to "multiple interacting human activities "(MIHA). ie Large and Small Discrete Streamside Features

"Sediment rates in areas that have little or no management show erosion rates equal or even above areas with management. (See Table 3.15 in the Draft) This fact invalidates the assumption of MIHA that some portion of the sediment in managed sections of the

watershed should be attributed to land management. The data does not support the assumption that timber management contributes to these instream sediment sources.

"When the MIHA categories of sediment are placed in the "Natural" sources of sediment, the total percentage of sediment over background levels is only 17%. This is less that what other TMDLs have determined to be a significant impact."

Response:
See Response to General Comment 15.

Comment YRK-10:
"The direct sources of sediment related to timber management, specifically road related, is a very small amount compared to background level. The reduction of these amounts is planned to be at levels that are not even measurable by the guidelines in the Draft guidance for preparation of erosion control plans (1 cubic yard). This will result in efforts with costs far in excess of the value received in water quality improvement."

Response:
See response to TPC1-2.

Comment YRK-11a:
"Temperature and shade canopy are already being protected in forested areas of the watershed. Shade canopy is arguably higher now than under natural fire regimes due to over 30 years of Forest Practice Regulations and effective fire suppression.

Response:
Comparison of aerial photos taken in 1944 to those taken more recently do not support the commenter's assertion.

Comment YRK-11b:
"Managing the riparian areas, including thinning of forested areas, should be a part of managing for all of the riparian resource values. Large wood, shade, wildlife habitat, hardwoods, and understory vegetation are being managed under the guidelines of the Forest Practices Regulations which include removing some trees."

Response:
Regional Water Board staff agree that management of the riparian zone can occur without affecting stream temperatures, and that stream temperature is just one of the factors that riparian management should account for.

Comment YRK-12, YRK-13:

"The implementation plan (Table 4) specifies using existing regulatory programs but allows for significant water board staff discretion for requiring additional planning and inventory. We are left with not really knowing the impacts that could result from the Plan on our road management and grazing programs."

"Delay approving an Implementation Plan until the technical TMDL is accurate enough to direct improvements and corrective actions.

"Delay approving the Implementation Plan until the specific guidelines for erosion control plans and other regulatory programs are developed."

Response:
The Board recognizes that adjustments may be needed in the future based on practical experience, and the Action Plan was purposely crafted to allow for adaptive management. The Regional Board is committed to working with stakeholders and sovereign governments in the Scott Valley and the Klamath Basin to implement an Action Plan that is responsive to local conditions. The Board recognizes that local information is important to the implementation process and will take that into consideration as it follows through with the provisions of the Action Plan. The effectiveness of the Action Plan will be reassessed in the future and is subject to change based on the findings of those assessments. Reassessment of the Action Plan is addressed in the Action Plan under Section VII. Also see Response to General Comment 2.

In addition to above response, the Regional Board believes that the technical TMDL is accurate enough for the purposes of defining the problem, creating a linkage between sources and impairments, and establishing load allocations that form the basis for an implementation strategy. The current impairments are the result of a number of interacting factors. Modeling these system dynamics with 100% accuracy is not possible due to the complexity of this interaction. However, the load allocations and identifications need only meet a minimum threshold for accuracy to serve as an adequate basis for implementation. The Regional Board believes that this threshold has been met and even surpassed with the level of data collection and analysis performed for this TMDL. The US EPA will be the agency to finally approved the technical TMDL and will assess the level of accuracy of the scientific component. Initial comments from the EPA indicate that the technical analysis goes above and beyond what is needed to establish the TMDL.

Comments by Craig Martz (DFG):
Comment YRK-14:
As part of the SSRT process, prioritizing is important, but some tasks can't be accomplished until other work is done and the TMDL should take sequencing into account. An example, in Chapter 4, the recommendation is made to prioritize revegetation in areas of high groundwater, such as the reach below the tailings. We agree groundwater is key, however, the increased bedload from the tailings has created an aggraded channel reach and that reach is not stable. Until stability is achieved, it may not

be effective to establish vegetation in that zone. We appreciate the acknowledgment of permitting effort. We are working with the RCD on a streamlined approach to streambed alterations and the take permit. We'd like to see some of the recommendations made by the RCD in the staff report.

Response:
See Response to General Comments 11 and 12.

Comments by Gareth Plank (landowner):
Comment YRK-15:
"Nature is complex and the model is simple in comparison. It (the model) is not accurate enough."

Response:
It is the nature of a model to extract the important factors and examine the relationships among them. Of course there is no way to fully reproduce all the complexity of nature, but the model shows basic relationships in adequate detail for the purposes of the TMDL.

Comment YRK-16:
"Memorialize the intent of your Board to offer a safe-harbour status to the Scott River watershed for the next 7 years based upon the stellar work completed and express commitment to excel in stewardship."

Response:
While the Regional Board does recognize the work done in the Scott River watershed, we cannot provide 'safe-harbor status' for any discharger of waste.

Comments by John Menke:
Comment YRK-17:
"You don't have the scientific skill to accomplish what you are trying to do with the technical component of the TMDL"

Response:
The Regional Board believes that the technical TMDL is accurate enough for the purposes of defining the problem, creating a linkage between sources and impairments, and establishing load allocations that form the basis for an implementation strategy. The current impairments are the result of a number of interacting factors. Modeling these system dynamics with 100% accuracy is not possible due to the complexity of this interaction. However, the load allocations and identifications need only meet a minimum threshold for accuracy to serve as an adequate basis for implementation. The Regional Board believes that this threshold has been met and even surpassed with the level of data collection and analysis performed for this TMDL. The US EPA will be the agency to finally approved the technical TMDL and will assess the level of accuracy of the

scientific component. Initial comments from the EPA indicate that the technical analysis goes above and beyond what is needed to establish the TMDL.

Comment YRK-18:
"Using 1900 as a basis is really a flawed concept especially since the Corp came in here."

Response:
See Response to General Comment 21.

Comment YRK-19:
"And if you haven't got sinuosity, you're never going to control the hungry water."

Response:
See Response to General Comment 5.

Comment YRK-20:
"We've got to have a diet assessment of the marine mammals at the mouth of the Klamath River. Then we have to have an assessment of the effect of warm water flowing down the Klamath all summer long in destroying coldwater refugia."

Response:
This is not the focus of this TMDL. The Scott River watershed TMDL establishes load allocations for sediment and water temperature and implements actions that reduce current loads in the Scott River watershed. Any activities or impacts outside the Scott River watershed are not within the scope of this document.

Comment YRK-21:
"Don had to resort to a gross estimate of sediment. He put 1 cm of loss on the floor and 2 cm everywhere else on a 30% break to get an estimate of creep. That's not too bad, except that it's so gross that there's no way a landowner can relate to that. "

Response:
This is a case of using the best available information, which was not much. The contribution of soil creep is universal and cannot be ignored, so staff strove for an average that could be applied as round figures averaged across the watershed. On a local basis, soil creep is influenced by – among other factors – steepness of slope, soil composition and profile, nature of soil-bedrock transition, moisture distribution through the year, vegetative cover, and root distribution and strength. As explained in the text, the rates applied represent an attempt to average out the variables on a watershed-wide scale and are not intended to be applied on a local or site basis.

The following comments were submitted by John Menke in writing at the Yreka Public Workshop:

Comment YRK-22:

"(There are) infeasible and unreasonable potential vegetation targets along the Scott River due to lack of stream sinuosity and floodplain access by the river."

Response:

This comment was addressed in a letter dated July 1, 2005 from Drs. Shilling and Viers to Dr. Menke:

"Furthermore, and also in contrary to claims by Dr. Menke, it is feasible to reestablish a mature cottonwood forest (as well as stream sinuosity and floodplain connectivity) in the Scott River Valley proper. The specifics of restoration success invariably center on capital resources (i.e., time and money), but rarely do scientists claim that all is lost… …One could point to the variable success of riparian restoration in the Scott River Valley as a deterrent to considering similar actions any further, as does Dr. Menke. We recommend that he read Stromberg (2001; Journal of Arid Environments 49:17-34), who discusses a number of reasons for variable success rates in riparian restoration. The foremost reason stated for restoration failure is the failure to not address underlying root causes of riparian loss and degradation, which include "alteration of herbivory regimes, disruption of hydrologic regimes, and direct conversion to irrigated cropland". Stromberg concludes (2001) that "restoration projects should be designed as science-based experiments … adaptive research and management policies should be integral to the process", and it is our feeling that any implementation plan should acknowledge as much. The importance of flow regime and fluvial dynamism in the restoration of riparian vegetation in the Scott River Valley cannot be overstated."

Also see Response to General Comment 5.

Comment YRK-23:

There was no accounting for high transpiration demand from vegetation.

Response:

See Response to General Comment 22.

Comment YRK-24:

There is no consideration of scour effects on plantings or agricultural soils if in fact some meanders were to be reconstructed.

Response:

The suggested analysis is beyond the scope of this analysis. Also, see Response to General Comment 5.

Comment YRK-25:

The use of CALVEG 2000 remote sensed imagery to characterize existing stream shade conditions on upland forest communities is flawed because it is old imagery, there was no ground truthing data collection, no justified accounting for natural disturbances, has no accuracy assessment, and uses a weak model to begin with (RipTopo).

Response:
RipTopo is a macro-scale surrogate measure indexing model for stream shading on a spatially explicit basis that has been used effectively to show landscape level differences in shade conditions. The model was calibrated with field data collected at 20 sites. The CALVEG 2000 was the most current readily available data that encompassed the entire watershed. Regional Water Board staff reviewed 1944 aerial photos of relatively disturbed upland areas and found that the 10% reduction applied to RipTopo results is reasonable.

Comment YRK-26:
"Apparently NIBBLE is still in use in the Canyon. If this is the case the stream temperature will be even higher than simulations presented in Figure 4.14. Much of the Canyon reach is underlain with large boulder material not having large tree shade potential."

Response:
The canyon shade modeling was done using the Heat Source model, using high-resolution imagery. Regional Water Board staff assumed areas covered in boulders and bedrock outcrops would remain as such. The open areas referred to in the document are mostly areas that have been cleared of vegetation, such as pastures, or small clearings in otherwise forested areas. Nonetheless, the effect on estimated shade values is marginal, as can be seen in Figure 4.12.

Comment YRK-27:
"A statement is made that the best available information was used on page 4-2. This is not true. According to USFS personnel, Forest Inventory and Assessment grid plot data and soils data are available which could more accurately predict tree height potential than CALVEG 2000."

Response:
The purpose of the analysis is to provide a watershed-scale depiction of shade conditions. The majority of Scott River watershed lands are outside of USFS ownership. For purposes of consistency we chose to use one data source. This in no way limits the ability of the USFS to present this data.

Comment YRK-28:

"I would like to know if Heat Source accounts for long-wave radiation and if any days were modeled under these temperature conditions. Scott Valley has many days over 100 F with warm nights. Were these high air temperatures analyzed?"

Response:
The Heat Source model does, in fact, account for long-wave radiation, as seen in Figure 4.1 A-D. The June 28 – August 1, 2003 scenarios utilized measured air temperatures as high as 106 ^{o}F.

Comment YRK-29:
"TMDL staff did not model water temperature on upland streams in the forest and this should be stated at the end of section 4.2.2 on page 4-10."

Response:
Regional Water Board staff modeled parts of Cabin Meadows and Houston Creeks, which are forested upland streams.

Comment YRK-30:
"In section 4.2.3, last paragraph, a general reference is made regarding the accuracy of 'models'. It should be noted that this reference does not include the RipTopo model used in the forest stream shade work."

Response:
This section is referring to stream temperature data. The RipTopo model does not predict stream temperatures.

Comment YRK-31:
"No accuracy check was made on RipTopo in the Scott River TMDL. This should be stated in the document."

Response:
The model was calibrated using field data.

Comment YRK-32:
"…the dip in temperature downstream of Young's dam is likely due to diversion of warm water in addition to accretion and this could easily be determined and should be."

Response:
Regional Water Board staff agree with the commenter's assessment of the cause of the rapid drop in temperatures below Young's dam. Modeling results presented in Figure 4.17 indicate that temperatures would decrease some in this reach, even without the diversion.

Comment YRK-33:
"Scott River and tributary flow measurement estimates … …should not assume diversion amounts are the fully adjudicated amounts. By that time, priorities are invariably in effect so the diversion amount is often substantially below the adjudicated allotment. DWR should have these records. The point is the diversion amounts are likely substantially overestimated in the TMDL analysis."

Response:
Regional Water Board staff disagree that the diversion amounts are likely substantially overestimated in the TMDL analysis. Water rights were used to estimate flows in only a few instances. Data indicates that the entire adjudicated flows were available at the South Fork diversions and the most upstream East Fork diversion. These were the only diversions approximated using water right information. DWR does not keep records in these locations.

Comment YRK-34:
"Actual accretion rates used in the modeling scenarios need to be included in the report for future reference."

Response:
The actual accretion values are presented in Figure 4.11.

Comment YRK-35:
"…the model has not accounted for increased water use by the cottonwood trees. This needs to be stated."

Response:
It is true that the groundwater accretion values were not adjusted in the potential vegetation scenarios. Regional Water Board staff did evaluate the effects of potential vegetation with decreased groundwater flows.

Comment YRK-36:
"It is unclear how many values in Table 4.3 are measured values."

Response:
All of the flows reported in Table 4.3 are measured except those that are in bold or italic print, the rated Scott River at USGS Gage values, and the Scott River at Callahan preliminary values.

Comment YRK-37:

"The Muskingum-Cunge method needs to be defined with a reference."

Response:
A reference has been added.

Comment YRK-38:
"The TMDL draft report needs to include discussion of pre- and post- 1955 and 1964 flood aerial photos in addition to the 1944 aerial photo information referred to showing relatively undisturbed areas along the Scott River. The point is these floods denuded the river, not man. And they will continue to denude the Scott River episodically."

Response:
1944 aerial photos were used to evaluate undisturbed riparian conditions of upland streams. They were not appropriate for use in evaluating undisturbed or potential conditions of Scott River riparian areas for the same reason the post-1955 and post-1964 photos are not; significant human disturbances had already altered the landscape. The history is well documented in Appendix B.

Comment YRK-39:
"The draft report does not discuss the effects of Scott River temperature modeling results in the context of Klamath River temperatures."

Response:
Discussion of Klamath River temperatures is beyond the scope of this analysis. The focus of this analysis is water quality conditions in the Scott River watershed. The Scott River modeling results will be reflected in the Klamath River Temperature TMDL.

Comment YRK-40:
"The statement is in the second paragraph in the Channel Geometry Scenarios is misleading. A sinuous channel would increase water heating due to increased travel time and sun exposure unless generated accretion resulted in overwhelming cooling effects."

Response:
A more sinuous Scott River stream channel would cause changes to both heating and cooling processes. Indeed, travel time would increase. However, sun exposure would be affected by the fact that more reaches would be oriented in a more east-west orientation, which would improve the ability of the vegetation to shad the water. Also, increased meandering would result in a small increase in hyporheic exchange. The overall change in temperature is the sum of these processes.

Comment YRK-41:

"Resource Management never intended that the South Fork road analysis using SEDMODL would be applied watershed-wide."

Response:
Regional Board staff did not expect that the South Fork results would be applied watershed-wide either. The South Fork Pilot Study was initiated only to demonstrate methods. Additional data on private road networks exists for other parts of the watershed, but was not provided for use in the TMDL analysis because of stated concerns about the methods demonstrated in the South Fork study. As a result, Regional Board staff developed rates for sediment delivery from roads and applied these to watershed wide data on road networks, including specific data on road locations and crossings.

Please note that the sediment contribution estimated using the SEDMODL analysis (Summarized under road-related sediment in Table 3.23 as Road/Stream Crossings and Road Related Cut/Fill) accounts for only about 2.6 percent of the total estimate of current sediment delivery and therefore differences in SEDMODL sediment contribution would not materially affect the analysis.

Comment YRK-42:
"Resource Management didn't do any modeling."

Response:
Resource Management applied a computer model, SEDMODL2, to estimate contributions form road tread and cutslope on roads on each geologic unit in the South Fork watershed. Rates developed from these results were applied watershed-wide on each geologic unit. The text in Section 3.2.1 has been changed. As discussed in Section 3.1.8, field data on private road networks was provided by the holders of these data to Resource Management, who used the data in SEDMODL2 and provided these results to the Regional Board, who then applied them watershed-wide. For reasons explained in the text, in areas of granitic bedrock, the SEDMODL2 results were supplanted with results from the Granitic Sediment Study, which was done locally.

Comment YRK-43:
It's hard to believe there is enough information gathered about the sedimentary/metamorphic geologic unit for extrapolation.

Response:
Regional Board staff used the best information available for the estimates. See response to YRK-42 regarding use of South Fork results watershed-wide.

Comment YRK-44:
Soil creep estimates are questionable. The wrong model was used.

Response:
Soil creep was estimated using a variety of methods, one of which relied on an algorithm in SEDMODL2. The SEDMODL2 results were not used in the sediment source summary, though these results were not substantially different in magnitude from results calculated using other methods, and were in general agreement with results calculated by others for North Coast watersheds. See the text for additional discussion.

Comments by Mark Baird:
Comment YRK-45:
"The research you're trying to have foisted on us is going to lead to theft of private property by the government."

Response:
This TMDL and Action Plan in no way initiates programs that lead to the theft of private property. The Action Plan proposes no new regulation, and relies on encouragement of on-going activities by many private landowners. See responses to General Comments 1 and 14.

Comment by Maury Tasem:
Comment YRK-46:
"You've talked about groundwater several times, when are you going to address the removal of groundwater? Are you going to open up another study 2 years down the road of the groundwater effect on the river? Why isn't it addressed right now?"

Response:
See Response to General Comment 6.

Comments by Mark Johnson:
Comment YRK-47:
"It's going to take 2 years to do a project, where right now it's a year. I've been told your process is another 120 days – so that's a whole other year."

Response:
The TMDL Action Plan does not require any new permits. The administrative process regarding projects that have the potential to impact water quality is the same before and after the adoption of this TMDL and Action Plan.

Comment YRK-48:
"You need to talk to other agencies and use their science. Don't use models science, you need to go out in the field."

Response:

Regional Board staff consulted with other agencies and used their data in developing the TMDL. Other agencies have also commented on the public draft and their suggestions have been incorporated as appropriate. The TMDL analyses for sediment and temperature involved a significant amount of field work, as described in the Staff Report in Chapters 3 and 4.

47. Yurok Tribe (YT1)

Comment YT1-1:
"I appreciate your efforts to keep the Tribes informed in a parallel fashion; however, our input starting as early as July, 2004 was not considered, for the most part (see attachment). In addition, since the Tribe was excluded from the TAG process, and given the fact that the Scott River community has a history of hostility toward government and regulation, we are very uncomfortable with the inequity with which comments and recommendations influenced the drafting of this TMDL."

Response:
We appreciate your comment. The Yurok Tribe was provided the opportunity to comment on the "TAG draft" and responses to these comments are provided in this document. In addition, the Yurok Tribe was provided quarterly updates on all Klamath Basin TMDLs via government-to-government meetings coordinated by EPA Region 9. Please also see Response to General Comment 3.

Comment YT1-2:
"The Scott River Sediment TMDL is not consistent with other sediment TMDLS developed by both the Board and USEPA. TMDLs such as the Garcia River (RB1), Redwood Creek (USEPA) and the Trinity River (USEPA) all have numeric instream targets for sediment. … The Redwood Creek TMDL goes on to outline upslope targets …The Scott River TMDL provides these targets only in Chapter 2 of the staff report under the *Problem Statement* section.

Response:
The Scott River TMDL Staff Report contains numeric targets (called Instream Desired Conditions for Sediment) in Table 2.2 and upslope desired conditions in Table 2.4.

Comment YT1-3:
"The Scott River TMDL provides these targets only in Chapter 2 of the staff report under the *Problem Statement* section. These targets should be carried through to the load allocation and action plan"

Response:
Language has been added to Chapter 6 linking the sediment indicators and desired conditions to the parameters to be monitored.

Comment YT1-4:
"Finally, although groundwater depletion is recognized as having an impact on stream temperature throughout the technical TMDL, the action plan is significantly deficient in addressing groundwater regulation and enforcement. Deferring to further study on this impact unnecessarily delays progress toward the achievement of water quality objectives and protection of beneficial uses."

Response:
See Response to General Comment 6. Groundwater use regulation and enforcement is outside the direct authority of the Regional Water Quality Control Board, though the Regional Water Board can request action by the State Water Resources Control Board in regulating water rights in a manner sufficient to support beneficial uses. That is a scenario contemplated by the proposed Action Plan and supporting staff report. The Action Plan first, however, contemplates a leadership role by the County in this area, by gathering pertinent data, data upon which any future recommendations for action would need to be based.

Comment YT1-5:
"We understand the uncertainties of natural systems and events, however, for the controllable source reductions it is imperative that some timeframe be set for achievement of the TMDL reductions. Without this element of time-based goals, there is no assurance that this TMDL will comply with the mandate of the Clean Water Act."

Response:
See Response to General Comment 1.

Comment YT1-6:
"There is a noticeable disconnect between the load reductions called for in the technical TMDL and the Action Plan. The table of proposed actions provides no quantitative, qualitative or even relative amount of pollution reduction that is expected to occur."

Response:
It is expected that successful implementation of the primary actions called for in the Action Plan or of follow-up actions if needed will lead to meeting the TMDL loading capacities in the Scott watershed, and that meeting the loading capacities will lead to meeting water quality objectives for both sediment and temperature. Also see Response to General Comment 1.

Comment YT1-7:
"We therefore recommend that the Scott River TMDL, as well as other TMDLs that are to be developed in areas remote to Santa Rosa, include a *Board Capacity to Implement*

section which would include an estimate of Board resources necessary to fully implement the TMDL and achieve water quality standards. This analysis would provide the basis for increased Board capacity from state and federal entities, as well as provide a measure for other stakeholders and jurisdictions in the basin to use in their assessment of how effective this TMDL is likely to be."

Response:
Thank you for this comment. Regional Water Board management certainly recognize the significant work load associated with TMDL implementation in the North Coast Region, as well as throughout California. Regional Water Board management develops yearly work plans that assess regional work priorities, and TMDL implementation is a high priority. In addition, Regional Water Board management shares these work plans with State Water Resources Control Board management.

Comment YT1-8:
"Last, the TMDL should outline more specific actions in regards to compliance monitoring. This should be accomplished through a periodic review of permits, licenses, and waivers issued by various other agencies in the watershed for their applicability and compliance with the TMDL and other Water Board authorities."

Response:
This suggestion will be considered during development of the monitoring strategy for the TMDL.

48. Yurok Tribe (YT2)

Comment YT2-1:
"Lack of quantification of important land use factors recognized to impact water quality such as timber harvest, road densities, near-stream roads, and road-stream crossings."

Response:
Information on road densities, near-stream roads, and road crossings is presented in Chapter 3, by subwatershed. The available information on timber harvest is incomplete both spatially and temporally. As discussed in Section 3.4.3 and Response to General Comment 15, staff relied on the information available, review of aerial photos, and field observations.

Comment YT2-2:
Lack of acknowledgement that peak flows in many watersheds in the Scott basin are higher than natural due to land use activities such as road construction and timber harvest. Increased peak flows cause increased erosion, channel scour, and consequent temperature impacts. Timber harvest increases the risk of rain-on-snow events, which are a factor in peak flows.

Response:
Increase in peak flows are now noted in Sections 3.1.6 and 3.4.3. Also see Response to General Comment 17.

Comment YT2-3:
"Lack of transparency of models and data. All models and data utilized in the Scott TMDL must be available for public inspection. These datasets include all GIS data (including roads, streams, landslides), road surveys, temperature data, and macroinvertebrate data. We request that you send us these datasets so that we can evaluate them."

Response:
Staff are trying to be as transparent as possible with data and models. Data are included in appendices of the Staff Report. Also see Response to General Comment 8.

Comment YT2-4:
"Failure to use all available tools to understand and manage watershed risk. Use of the SHALSTAB shallow debris torrent model would allow mapping of erosion hazard areas that could be used to evaluate causal relationships of past activities and as a screen for potential future management consideration."

Response:
See Response to General Comment 18.

Comment YT2-5:
"Not targeting essential coho salmon habitat for prioritization for protection and restoration."

Response:
See Response to General Comment 12.

Comment YT2-6:
"Not recognizing air temperature as the primary factor driving water temperature (Bartholow, 1989), and instead focusing on shade."

Response:
See response to QVIC-51

Comment YT2-7:

"Not fully utilizing remote-sensed vegetation data, including change scene detection, to understand forest health, growth and its relationship to cumulative watershed effects."

Response:
This type of information was not a key piece of information for the TMDL analysis. Also see Response to General Comment 20.

Comment YT2-8:
"Not utilizing the best available information on groundwater/surface water interactions and specifically not utilizing the 1955 USGS report on this topic."

Response:
Regional Water Board staff reviewed the 1955 USGS report (and others) and took the information it provides into account.

Comment YT2-9:
"It relies on the Timber Harvest Plan process, a process repeatedly shown to be inadequate in dealing with timber harvest impacts."

Response:
See Response to General Comment 9

Comment YT2-10:
"It does not address implementation actions necessary on public lands administered by the USFS and BLM."

Response:
Sections 5.1.11 and 5.1.12 address implementation actions for the US Forest Service and Bureau of Land Management, respectively. The Action Plan identifies both the USFS and BLM for development of MOUs.

Comment YT2-11:
"It does not include provisions for road maintenance on either public or private lands."

Response:
See response to ARC-21

Comment YT2-12:
"It does not address winter logging and especially heavy hauling on native surface and gravel roads."

Response:
See response to General Comment 9 and ARC-21.

Comment YT2-13:
"The Mid-term evaluation of the Klamath River Basin Fisheries Restoration Program (Kier Associates, 1999) is not referenced, although it provides a useful overview of the success of restoration projects through 1998 and changes in habitat during the duration of the program. The Scott TMDL needs to require that all data useful for evaluation of restoration projects be publicly shared and needs to specifically define needed monitoring associated with current and future restoration projects, including organized photo points."

Response:
See responses to General Comments 8 and 10.

Comment YT2-14:
"Background discussions of hydrology, as well as all the sections of the Scott TMDL, do not mention the linkage between sediment build up in stream channels on the Scott Valley floor and their impact on stream flow. Channel aggradation in the mainstem Scott and its tributaries leads to diminished surface flow during summer and fall and increases the frequency of channel de-watering."

Response:
Regional Water Board agree that aggradation can lead to more hyporheic flows at the expense of surface flows. However, Regional Water Board staff have not seen widespread evidence of such a phenomenon occurring in the Scott River watershed. Much of the Scott River mainstem has been incising during the recent time period, not aggrading, due to changes in grade control and other channel manipulations.

Comment YT2-15:
"The Scott TMDL Problem Statement lacks recognition of potential for rain on snow events and increased peak discharge, which is a primary driver of cumulative watershed effects (Jones and Grant, 1996). Channel changes caused by increased peak flows can scour riparian vegetation and cause temperature problems even if sediment yield is low."

Response:
See Response to General Comment 17.

Comment YT2-16:
"Other TMDLs for northwestern California (U.S. EPA 1998, 1999; 2001) set reference targets for fine sediment, V* and other in channel metrics useful for understanding pollution trends. The Scott TMDL does not currently contain these reference targets.

Specific targets should to be adopted and upcoming TMDL monitoring plan should require monitoring of these parameters (see Monitoring section below)."

Response:
The Scott River TMDL Staff Report contains numeric targets (called Instream Desired Conditions for Sediment) in Table 2.2 and upslope desired conditions in Table 2.4. The language of Chapter 6 has been modified to clarify the link between indicators and parameters to be monitored.

Comment YT2-17:
"The Scott TMDL references aquatic macroinvertebrate studies by the Siskiyou RCD and recommends use of the Russian River Index of Biotic Integrity (IBI) for comparison. The Russian River IBI is adapted from an urban stream setting and is not appropriate for comparison in the Scott River basin. The RRIBI does not contain control streams; therefore, since the universe of samples only contains watersheds ranging from impaired to highly impaired, they cannot serve as a target or reference. Furthermore, the Russian River has many streams that are highly impacted from urbanization and the two ecosystems are not comparable."

Response:
Benthic macroinvertebrates are important both as indicators of instream conditions and as food for fish. In monitoring macroinvertebrates, staff find that having a means of comparing watersheds is useful both in evaluating watershed and in comparing them. Harrington and Born (1999) found the RRIBI to be an effective and applicable measure of macroinvertebrate health outside the Russian River watershed. However, the California Department of Fish and Game is developing a North Coast IBI that will be specific to three different eco-regions in the North Coast Region. Regional Water Board staff propose to apply the North Coast IBI when it is published.

Comment YT2-18:
"The USFS survey data acquired by the RWB for the Scott TMDL were not provided with any metadata, so it is not known whether all reaches measured were of the same gradient or if channel confinement varied between sites. Values appear to indicate higher impacts in reaches of streams below heavily managed areas, such as Tomkins and Canyon Creeks, but moderate impacts in watershed areas with lesser management, although the Scott TMDL does not explore that possibility."

Response:
Staff agree that more detailed data would give a more thorough picture of riffle embeddedness and fine sediment in the Scott River and tributaries. For the purpose of the TMDL, however, staff believe that the data are sufficient to establish that there is presently an impairment and mitigation measures are appropriate. Future monitoring efforts should include the types of metadata the comment refers to.

Comment YT2-19:
"Because there are no data regarding large wood in streams, discussion of its abundance and distribution do not occur in the Scott TMDL. The Scott TMDL needs to follow the guidance of Dunne et al. and use the best available tools, including remote sensing data and models to examine the relationship of timber harvest and large wood recruitment, particularly in reaches that are known to be critical habitat for juvenile coho salmon rearing."

Response:
Large woody debris recruitment is beyond the scope of this TMDL.

Comment YT2-20:
"While the Scott TMDL states that "no systematic analysis of pool distribution and depth conditions in the Scott River watershed is currently available", page 4-6 of the TMDL states that the temperature analysis included habitat typing data provided by the Siskiyou RCD and U.S. Fish and Wildlife Service (USFWS). The U.S. Forest Service may also have habitat typing data for streams in the Scott River watershed. Typically, habitat typing data includes data on the distribution and depth of pools. If so, a summary of these data should be presented in Section 2.2.1.4, or an explanation provided as to why they was not used."

Response:
Thank you for identifying these data. There has not been adequate time to acquire, review, assimilate, and incorporate these data into the Staff Report, but may still be useful in the adaptive management process contemplated by the Action Plan.

Comment YT2-21:
"The Scott TMDL should explicitly state targets of less than 14% fines less than 0.85 mm and less than 30% sand and fine gravel (<6.4 mm). The Scott TMDL should avoid making references for upper limits, such as 30% fines < 6.4mm, as fully acceptable since Kondolf (2000) showed that this is a level where 50% mortality of salmonid eggs can be expected. Fine sediment data from Lester (1999) for lower Scott River tributaries should be listed in a table and reaches where study was conducted shown on a map. Also, there appears to be an inconsistency between the citation and references, where Lester (1999) is cited in the text, but it appears in the references twice, as "Lester (1997)" and "Lester (1999)".

Response:
The desired conditions called for in the comment are in Table 2.2 of the Staff Report.

Comment YT2-22:

"Sommarstrom (1991) is cited three times in this section but is not listed in the references section. This is likely either a typographic error (should be Sommarstrom et al., 1990) or an unlisted reference, and should be corrected."

Response:
The citation has been fixed.

Comment YT2-23:
"Road densities are not included in Table 2.8 or in the text of 2.2.2, ignoring potential CWE from roads."

Response:
Road mileages and densities are now included in Tables 3.3 and 3.4 of the Staff Report.

Comment YT2-24:
"The extent of timber harvest is also not mentioned in Table 2.8 and only inferred in the item "activities" on unstable lands."

Response:
Two issues are mentioned here: the extent of timber harvest, and activities on unstable lands. Regarding extent of timber harvest, staff found in the field that signs of harvest, including stumps or different ages, cut logs, and impact on streams appear in many places where the available GIS harvest coverage does not show harvest because the coverage is only for younger harvest. For this reason, staff did not include the GIS maps in the Staff Report as harvest areas shown are less than true harvest area and may be misleading. Evaluating and permitting activities on unstable land are the purview of the Timber Harvest Permit process and not the TMDL. Both the USFS planning process and the CDF review team process identify and restrict operations on unstable landforms.

Comment YT2-25:
"The Scott River Basin includes large areas which are unstable or potentially unstable. These terrains cannot accommodate the same road and timber harvest intensities as more stable terrains without experiencing cumulative watershed effects. We do not see evidence that these differences in landform and associated risk have been incorporated into the TMDL. This should be corrected."

Response:
Staff agree that different areas vary in vulnerability to disturbance. Evaluating and permitting activities on unstable land are the purview of the Timber Harvest Permit process and not the TMDL. Both the USFS planning process and the CDF review team process identify and restrict operations on unstable landforms.

Comment YT2-26:
"There is no desired future condition of riparian zones called for in Table 2.8, although timber harvest in inner gorge areas is linked to increased mass wasting (de la Fuente and Elder, 1998). In order to protect salmon and beneficial uses, the Scott TMDL needs to require a minimum distance for protection of riparian function. This should be one to two site potential tree heights for such functions as relative humidity or to the height of the inner gorge to prevent mass wasting."

Response:
The desired future watershed and riparian conditions are those that facilitate natural stream temperatures, as is stated in Section 4.4. CDF Forest Practice Rules (FPR) provide a minimum of 100 feet buffers on fish bearing streams for large woody debris recruitment, temperature moderation, and sediment filtering. The FPRs also restrict operations within inner gorges. Likewise, the USFS provides protection of streamcourses, including riparian reserves, and of sensitive inner gorge areas through their planning process and implementation best management practice.

Comment YT2-27:
"The Scott TMDL states that "agricultural fields or harvest areas in which adequate vegetation……are not considered disturbed areas." Grass fields with no bare soil separated from the river by an adequate buffer in the Scott Valley may appropriately be eliminated from consideration as disturbed; however, the Scott TMDL assumes that older timber harvests have been re-vegetated and are thus no longer contributing to cumulative watershed effects. If forest regeneration is poor on some sites, then susceptibility to rain-on-snow events may remain elevated for an extended period of time."

Response:
Staff do not assume that old harvest areas revegetate to their original degree of soil protection in the time period involved in timber harvest in the Scott, and that is part of the basis for the estimation of EMIHAs. In addition, there is the question of fire, and the role that harvest, controlled burning, and decades of fire suppression play in affecting the fire regime of the landscape. Also see Response to General Comments 17 and 19.

Comment YT2-28:
"The TMDL should address the issue of stacked culverts and recommend that the USFS method of changing crossing types in high risk locations be carried out on private land as well."

Response:
Comment noted.

Comment YT2-29:

"It is unknown how many road-stream crossings were surveyed, but the failure rate is likely higher than the TMDL target of 1% of crossings failing in a 100-yr return interval storm, despite the fact that the 1997 storm was only a 14-year return interval storm."

Response:
Comment noted.

Comment YT2-30:
"The Scott TMDL makes assumptions with regard to road-related projects on timberlands that may not be supported, for example, that roads can be hydrologically disconnected and that impacts from roads can be fully mitigated without reducing road densities."

Response:
The TMDL does not say or imply that hydrologically disconnecting roads can fully mitigate sediment delivery; rather that decreasing connectivity is a way of decreasing sediment delivery. Proposed watershed indicators are intended to get at the features of roads that lead to sediment delivery and thus don't rely on road densities as a surrogate for road design and maintenance. Road density may be considered in future updates of the sediment indicator list. Also see response to QVIC-19.

Comment YT2-31:
"In TMDL implementation (Chapter 5), a requirement should be imposed on the USFS and private timber companies that roads that cannot be annually maintained must be fully decommissioned."

Response:
See response to ARC-21

Comment YT2-32:
"Roads which do not receive needed maintenance will eventually deliver significant amounts of sediment to streamcourses even if they are "stormproofed." Therefore, it is essential that TMDL implementation (Chapter 5) specify maintenance needed to restore beneficial uses."

Response:
See response to ARC-21

Comment YT2-33:
"This section notes that the SHN Consulting Engineers and Geologists survey did not quantify the number of roads adjacent to streams; however, a capable GIS analyst could easily conduct this analysis for the entire Scott River basin from existing data. As stated

above, the RWB has the capability to perform this analysis, and should do so, and present the results in the TMDL as tables and charts."

Response:
This information is tabulated by subwatershed in Chapter 3 of the Staff Report.

Comment YT2-34:
"Unfortunately, the TMDL states that "analysis of activities in unstable areas was not conducted for this report." The Scott TMDL should be using the SHALSTAB model to map high risk areas, identify the linkage these areas, management disturbance and resulting sediment yield."

Response:
See Response to General Comment 18.

Comment YT2-35:
"Similar to the road density and road location maps requested above, we recommend that the RWB include TMDL tables and charts of the percentage of each Calwater Planning Watershed that has been timber harvested over the period of available data, and include them in section 2.2.2.6."

Response:
See Response to General Comment 20.

Comment YT2-36:
"The RWB staff should be using remote sensing data for reconnaissance and analysis, such as change scene detection, to understand patterns of landscape disturbance and forest growth and build that knowledge into the TMDL."

Response:
See Response to General Comment 20.

Comment YT2-37:
"A map of the transient snow zone needs to be added to the Scott TMDL as well as a discussion of increased peak flow, channel scour and resulting increased water temperature. The TMDL Implementation should call for reduced road densities and timber harvest in the transient snow."

Response:
See Response to General Comment 17.

Comment YT2-38:
"KRIS contains USFS data from 1994 and 1995 for the mainstem Scott and tributaries in the West Canyon sub-basin. These data should be incorporated into the West Canyon and mainstem charts in this section of the TMDL."

Response:
The temperature data analyzed by staff was more then adequate to evaluate current conditions and develop the source analysis. Staff reviewed other data that the commenter has suggested (older USFS data) be incorporated, and found the data has quality control issues. Regardless, the incorporation of the suggested data would not likely change the actions described in the Action Plan. Nonetheless, these data are part of the public record.

Comment YT2-39:
"The Scott TMDL states that "target shade conditions are those that result from achieving the natural mature vegetation conditions that occur along stream channels in the watershed." The TMDL then fails to note that timber harvests have been active in riparian zones, despite availability of USFS and CDF 1991-2002 timber harvest data."

Response:
Riparian timber harvest activities can occur while still supporting natural shade and microclimate conditions, if appropriate considerations are made.

Comment YT2-40:
"As discussed above, refugia need to be identified and protected in the Scott TMDL and Scott River TMDL Implementation should follow Bradbury et al. (1995) in protecting these areas as a priority and focusing restoration in restorable areas adjacent."

Response:
See Response to General Comment 12. Also see response to QVIC-56.

Comment YT2-41:
"This section of the TMDL does not mention that aside from thermally stratified pools, the confluences of smaller tributaries with the mainstem Scott River are also important coldwater refugia. These areas are particularly important in the Scott River canyon. Information on the importance of creek mouths as coldwater refugia should be added to this section of the TMDL."

Response:
Section 2.5.2.2 has been modified to incorporate this comment.

Comment YT2-42:

"This extrapolation from the South Fork to the entire Scott basin requires some assumptions. These assumptions should be clearly stated in the TMDL so it can be determined if they are valid."

Response:
Commenter is correct concerning assumptions. These are now spelled out in Section 3.2.1. The best information available at the time was field checked, used to develop rates, and then applied to the watershed.

Comment YT2-43:
"It appears then that the road erosion component of the TMDL is extrapolated from only about 2% of the entire Scott basin. This number should be calculated more precisely and included in the TMDL in section 3.2.1."

Response:
See response to YT2-42.

Comment YT2-44:
"The South Fork Scott is one of the less disturbed sub-watersheds in the Basin. This suggests that utilizing it to estimate road related sediment delivery could result in a substantial underestimate of road related sediment impacts."

Response:
See response to YT2-42.

Comment YT2-45:
"This section notes that the South Fork data showed a 50% underestimation of road-stream crossings, so the number of road-stream crossings in each of the rest of the sub-basins was doubled. If possible, some attempt should be made to determine if that is a valid assumption."

Response:
The 50% undercounting of road/stream crossings was in the South Fork, and as the study developed it was not extrapolated to the rest of the Scott. The number of crossings used in the Staff Report is the number that comes out of the appropriate inventories.

Comment YT2-46:
"Given that only approximately 2% of Scott basin was surveyed, and these large features were found, there are almost certainly "anomalous" major features in other areas of the Scott basin. By not including those "anomalous" features, the RWB has likely skewed its estimate of road-related sediment production low."

Response:
Large road-related features were defined and attributed in the landslide inventory, Section 3.3.

Comment YT2-47:
"3.8.2 Streamside Mass Wasting and Erosion Features - Stratified Random Sampling: This section of the TMDL should state what percentage of the total stream miles in the Scott basin were surveyed in the stratified random sampling. Any embedded assumptions should also be stated. For instance, this analysis assumes does not take into account differences in disturbance regimes between watersheds."

Response:
Total stream miles and percent sampled are now included in the Staff Report.

Comment YT2-48:
"The final document needs to reference Bartholow (1989), Essig (1998) and Poole and Berman (2001). Bartholow (1989) demonstrated that air temperature over the stream is by far the most significant driver of maximum water temperature (Figure 19). The Scott TMDL model runs mention that microclimatic effects were considered, but the description of model parameters and assumptions is lacking."

Response:
See response to QVIC-51

Comment YT2-49:
"The Scott TMDL states that the timber harvest permit process under CDF's jurisdiction will prevent future riparian damage despite previous studies (Ligon et al., 1999) and experience in the Scott River basin show that that process has not worked previously in this regard."

Response:
See Response to General Comment 9.

Comment YT2-50:
"Page 4-32 states that, "The load allocations for this TMDL are the shade provided by topography and natural mature vegetation conditions that occur at a site, approximated as adjusted potential shade conditions." This statement from the Scott TMDL infers that where topographic exists, retention of trees for shade might be decreased during timber harvests. This ignores the effects of riparian timber harvest on large wood recruitment and the implications for aquatic habitat."

Response:

Recruitment of large woody debris is beyond the scope of this temperature TMDL.

Comment YT2-51:
"The graphs show the annual minimum and maximum measurements at a well, along with annual precipitation at the Fort Jones rain gage. The RWB should consider including these graphs and map in the TMDL."

Response:
Addition of the graphs of the five wells would not result in new understandings or changes to the TMDL Action Plan. The graphs of the five wells are part of the public record.

Comment YT2-52:
"4.3.1.7 Results Combined Scenarios: This section discusses the results of modeling scenarios that combined changes to individual factors (shade, groundwater accretion, surface diversions, and channel geometry) to see the effects on temperature. For some reason, no numbers or figures are presented in this section. Graphs should be added to show the results of these combined scenarios."

Response:
A graph of the combined scenario results has been included.

Comment YT2-53:
"4.7 Recommendations for Additional Study and Future Action: The Scott TMDL (p 4-34) recommends supporting "riparian grazing workshops that educate range managers on the latest techniques for managing riparian areas in rangelands." Holding riparian grazing workshops is a good idea, but this should be phrased differently, with an accompanying alteration of philosophy. The phrasing implies a top-down approach in which outside experts are going to come in and "educate" the locals about the best way to manage their land. The citizens of Siskiyou County may not respond well to that approach. We recommend the following language instead "Support riparian grazing workshops where local range managers and other experts can exchange information on the latest techniques for managing riparian areas in rangelands."

Response:
The text has been revised.

Comment YT2-55:
"An analysis of flow data at the USGS gauge - normalized for annual precipitation differences – should be conducted and included in the TMDL. This analysis will demonstrate the impact on surface flows of increase interconnected groundwater pumping."

Response:
Regional Water Board staff disagree that this type of analysis would be conclusive, since it would not consider the diversion dam removal and subsequent downcutting that occurred coincident with the increase of irrigation wells in the 1970s and 1980s. Regional Water Board staff believe that a comprehensive study of the interaction of surface water and groundwater would be able to separate these influences.

Comment YT2-56:
"Scott TMDL should set quantitative limits on allowable road densities in each watershed (see comments in section 2.2.2, 2.2.2.2, and 2.2.2.4 above). If the RWB does not have adequate information on which to base such a limit, studies should be conducted to determine what an appropriate value would be."

Response:
Comment noted. Also see response to YT2-30.

Comment YT2-57:
"The Scott TMDL should set quantitative limits on the percentage of a watershed that can be harvested in a given time frame."

Response:
Generally speaking, limiting riparian harvesting, reducing activities on unstable areas, and reducing near-stream roads and crossings are part of the Forest Practice Rules, the USFS planning process, and the general permits and waivers adopted by the Regional Board.

Comment YT2-58:
"Specifically, we recommend that MOUs with the USFS and BLM commit the USFS and BLM to implementing the Aquatic Conservation Strategy of the Northwest Forest Plan."

Response:
Comment noted. The issue can be discussed during MOU development.

Comment YT2-59:
"We recommend that the Implementation Plan require annual post wet season and post major storm inspection of all native surface and gravel roads and that all problems identified through such inspections be repaired in a timely manner. Road maintenance requirements should be applied at minimum to all public and private native surface and gravel roads."

Response:
Comment noted. Additionally, on a THP by THP basis, the Regional Water Board's General Waste Discharge Requirements for timber harvest activities on private lands requires inspections of operated areas after the winter period to specifically look for new discharge sites and validate success at repaired sites.

Comment YT2-60:
"Implementation Actions – is also silent on the issue of heavy winter hauling (logs, etc.) and winter logging. This omission needs to be corrected."

Response:
See response to ARC-21

49. Joel Ziegler (JZ)

JZ-1 Comment:
"I know that the fishery has suffered a tremendous decline to the point that I nearly two decades ago quit taking any fish and almost gave up sport fishing entirely. Goals and standards most (sic) be imposed and enforced by an adequately funded agency with teeth to bring about compliance."

Response:
Comment noted. See Response to General Comment 1.