

## **APPENDIX J**

### **RESPONSE TO PUBLIC COMMENTS**

As described in **Section 9.0**, the formal public comment period for the Shields River Watershed Water Quality Planning Framework and Sediment TMDLs extended from June 2, 2008 to July 2, 2008. Six individuals/organizations submitted formal written comments. Excerpts of their comments have been organized by primary topic heading in this section. Responses prepared by DEQ follow each of the individual comments. The original comment letters are located in the project files at DEQ and may be reviewed upon request.

In addition to the comments below, several general comments that mainly included grammar errors and missing information were addressed by modifying the final document. These comments were all addressed and are not summarized below.

#### **1. Public Review Notification**

**Comment 1.1:** Although DEQ has agreed to send notice to Trout Unlimited and the MCAFS at the beginning of the public comment period, we received no communication, and were not aware of the document's release until well into the public comment period. As these lengthy documents take considerable time to review, prompt notification is critical. Please make sure all water quality planners releasing TMDL's are aware of the agreement among DEQ, MCAFS, and Trout Unlimited to ensure we have adequate time to review these plans.

**Response 1.1:** The DEQ Public Review and Stakeholder Notification Procedure was followed regarding the public comment period. The public meeting and public comment period were announced as described in **Section 9.0** and e-mail notification of the comment period was sent to stakeholders as well as the standard TMDL recipient list. DEQ has verified that contact information for both Trout Unlimited and MCAFS are up-to-date and apologizes that your notification was delayed. The Public Review and Stakeholder Notification Procedure will be modified in the future to document the recipients of the public review notice and verify that it matches the stakeholder and standard recipient list.

#### **2. Data Incorporation into 303(d) Listing Process**

**Comment 2.1:** Another inadequacy in DEQ's approach to addressing temperature in dewatered streams is its omission of pertinent, readily available data in its biennial 303(d) list review, despite state law that requires "the department shall use all currently available data including data obtained from federal, state, and local agencies... (MCA 75-5-702). The US Geological Service (USGS) has been monitoring water temperature at its gauge near the mouth of the Shields since 1999, making these data readily available for several iterations of the biennial 303(d) list review. As the data assessment record sheets for the Shields River are not currently available, it is unclear if DEQ ever considered these data. According to Carol Endicott (MFWP, personal communication), pending development of temperature guidelines for Yellowstone cutthroat trout, fisheries managers are using values developed for westslope cutthroat trout

developed by Bear (2005), which call for maintaining maximum temperatures within the optimal range (13- 15 °C).

**Response 2.1:**

Regarding the availability of assessment records, hard copies of the assessment records, including assessment records for the Shields Watershed, are available to the public by request. Also, the DEQ does maintain a website (Clean Water Act Information Site) where assessment records are available electronically. Unfortunately, the assessment data for the Shields River are not currently available on the Clean Water Act Information Site because of an oversight during the reformatting. DEQ apologizes for the inconvenience; thank you for notifying us of the issue. The DEQ Monitoring and Assessment group is aware of the problem and will correct it.

Regarding temperature values, exceeding a temperature threshold alone does not constitute a violation of Montana's temperature standard, which identifies an allowable departure from naturally occurring temperature conditions. Naturally occurring temperatures within a water body may be above fish thresholds, so although they may be used along with other data (such as temperature and canopy measurements), thresholds cannot be applied as stand alone conditions that have to be met or as a solitary line of evidence for determining compliance with Montana's temperature standard. However, DEQ does evaluate exceedances of both the optimal range and upper incipient lethal temperature based on literature values including those developed by Bear (2005) to assist with beneficial use support determinations. Additional evidence showing that human activities can be reasonably modified to improve temperature conditions for aquatic life must also exist.

Regarding use of assessment information provided by other agencies, the water bodies in the Shields watershed have not been formally assessed for beneficial use support since the 2000 303(d) listing cycle. Thus, data collected since that time is not reflected in the listing status. Even if a water body is not reassessed during a listing cycle, data are collected in the file to be incorporated into the next formal assessment. Changes in both the listing process and to the assessment database resulted in an update to the file records after 2000, but this work did not constitute a formal reassessment. Therefore it is inaccurate to suggest that the DEQ did not follow the applicable state laws. The available information is not incorporated into any impairment determinations because the type of formal assessment that could have resulted in an impairment determination has not occurred since 2000.

During each listing cycle hundreds of stakeholders from all over Montana are solicited for recent data. In addition to data and information received during that solicitation, DEQ uses data collected from its own monitoring efforts and data collected by other organizations that operate monitoring programs and store their data in publicly accessible databases. In addition to the EPA STORET database, databases operated by the United States Geological Survey and the Montana Bureau of Mines and Geology contribute a significant amount of data to water quality assessments. The result of all these combined

data sources is a collection of data and information of varying technical rigor that must be reviewed as an assemblage to determine whether sufficient credible data exists to proceed with the assessment. Because of time and resource constraints, all data received during this process is added to the assessment file but will not necessarily undergo a formal assessment within that listing cycle. In establishing and reporting on use-support decisions in the *2006 Integrated Report*, DEQ conducted a formal 60-day public comment period to solicit comments related to beneficial-use support determinations. Comments related to beneficial-use support determinations for specific water bodies should be submitted through this process. For more information on the State's water quality assessment process and reporting of beneficial-use support decisions, please refer to Montana's 2006 *Integrated 305(b)/303(d) Water Quality Report* at <http://www.deq.mt.gov/CWAIC>.

**Comment 2.2:** Substantial credible data collected during planning efforts confirmed nutrients were indeed impairing water quality in the Shields River. Apparently, a clerical error resulted in omitting nutrients as a source of impairment on the 2006 303(d) list and DEQ decided it need not rectify the error (Montana Fish, Wildlife, and Parks, Stakeholder Draft Comment Letter, April 2, 2008). The Montana Water Quality Act requires DEQ to use all currently available data in assembling the 303(d) list and allows DEQ to modify the list only if there is sufficient credible data to support the modification.

**Response 2.2:** As discussed in Response 2.1, the water bodies in the Shields watershed have not been formally assessed for beneficial use support since the 2000 303(d) listing cycle. As cited in **Section 1.4**, “Additional data collection and analysis was completed for pollutants within several water bodies where impairment conditions were suspected, but had not been previously confirmed during application of DEQ's assessment process using methods consistent with State Law (75-5-702).” This [nutrient] data collected during TMDL development and all other available data will be evaluated as part of the formal assessment process in a future 303(d) listing cycle according to the methodology is identified in DEQ's Water Quality Assessment Process and Methods (DEQ 2006). Until such time that a formal assessment is done, it is inaccurate to imply that confirmation of impairment, as defined by Montana State Law, exists and it is inaccurate to link this to a clerical error.

### **3. Low Flow and Temperature Impairment**

**Comment 3.1:** The Shields River TMDL plan provides an example of a significant shortcoming in DEQ's approach to water quality planning, namely the failure to recognize the link between dewatering and thermal alterations. Designation of a stream as dewatered should automatically trigger evaluation of thermal regime with TMDL's developed as indicated by the available data and data collected through the TMDL planning effort for a given stream. At a minimum, DEQ should include temperature among the pollutants potentially requiring TMDL's in Section 1.4 of the final plan. The Shields River and several of its tributaries are chronically dewatered streams, which DEQ acknowledged by listing flow alterations among causes of impairment. A primary consequence of reduced stream flows is thermal loading, which presents a major constraint on cold water fishes in streams throughout Montana. Chronic dewatering and associated thermal

alterations are the primary factors limiting fish populations in the Shields River (Scott Opitz, Montana Fish, Wildlife and Parks [MFWP], personal communication).

The DEQ's stated rationale for ignoring thermal alterations in dewatered streams stems from the distinction between pollutant and pollution, and the EPA does not require TMDL's for pollution. Nonetheless, DEQ has frequently developed TMDL's for streams listed only for pollution on both the 1996 and the current 303(d) list when the pollution category can be linked to a pollutant.

**Response 3.1:** DEQ agrees that lack of instream flow is often one of the most significant factors in diminishing beneficial use support for aquatic life and fisheries but disagrees that the link between flow alterations and temperature is ignored. However, temperature impairment evaluations and TMDL development are outside of the scope of this document. As discussed above in Response 2.1, impairment determinations are made as part of the 303(d) listing process. Within that framework, a weight-of-evidence approach is used to determine if there is sufficient and credible data (SCD) to determine if a water body is fully supporting all of its beneficial uses. DEQ recognizes dewatering is a concern in many water bodies throughout the state and it is often linked to temperature impairment, but limited flow alone does not qualify as SCD for a temperature impairment determination. During the 2000 303(d) assessment of water bodies within the Shields watershed, the segments listed for flow alterations had limited temperature data. **Section 1.4** discusses potential future TMDL development related to data collected during TMDL development. Temperature is not included on this list because no temperature data were collected or reviewed during TMDL development. However, during stakeholder review, DEQ became aware of temperature data recently collected by MT FWP. **Section 8.7.1** states the following: "In addition to affecting sediment transport, low flows can contribute to elevated water temperatures, which can diminish the ability of a water body to support fish and other aquatic life. Montana FWP has several years of temperature data throughout the watershed (Endicott 2008); DEQ should coordinate with FWP to incorporate temperature data into future 303(d) water quality assessments within the Shields TPA."

In some instances where there is only a pollution listing, data collection during TMDL development presents significant or overwhelming evidence of a link to pollutant-related impairment and a TMDL is developed. Other times, data are not collected for pollution-impaired water bodies during TMDL development or a clear pollutant link is not established and additional monitoring is recommended. Additionally, data collected on listed and unlisted streams during TMDL development typically pertains to the pollutants associated with the 303(d) listed water bodies; no water bodies within the Shields watershed are listed as impaired for temperature. TMDL development decisions for pollution listings where an associated pollutant is identified are made on a case by case basis and are at the discretion of DEQ taking into consideration the watershed scale protection provided by the existing TMDLs under development, stakeholder desires, scheduling requirements, and overall resource availability. Regardless of TMDL development decisions, DEQ recognizes the detrimental effect pollution can have on water quality and aims to incorporate pollution into water quality restoration plans. As discussed above, the Shields TMDL document recognizes flow alterations as a beneficial

use limitation and discusses it in several portions of the document. For instance, part of the Executive Summary states, “Restoring instream flow to dewatered tributaries is another critical component to restoration of the Shields River Watershed.” Flow limitations are also discussed in the Watershed Characterization (3.2.2.1) and in the Implementation and Monitoring Strategy Section (8.4.3).

**Comment 3.2:** Significant credible data available from USGS and Montana Fish, Wildlife, and Parks demonstrate that thermal loading is a significant factor limiting salmonids in the Shields River basin. Congressional intent apparent in the Clean Water Act clearly identifies, as a primary concern of the Act, the effects of thermal loading and water temperatures on aquatic life. Yet the only mention of water temperatures in the Draft TMDL lies in section 3.1.5 in a description of climate and in section 4.1.1 in a description of types of pollutants included in the 303(d) list. DEQ’s apparent reason for omitting discussions of thermal loading is “that EPA limits TMDL development to waters limited by pollutants (Dodson 2001).” Montana DEQ has already established a practice of considering the effects of water temperatures and dewatering in TMDL’s developed for the Ruby River, the Bitterroot River, the Sun River, and Ninemile Creek.

**Response 3.2:** These issues are addressed in Responses 2.1 and 3.1.

#### 4. Source Assessments

**Comment 4.1:** There is substantial uncertainty regarding the sediment modeling that needs to be disclosed in the TMDL document. The sediment amounts contributed by the various sources are estimates that have never been ground truthed nor are they supported with actual sediment data. Therefore, we are far from convinced that the sediment modeling is descriptive of actual conditions in the watershed. The watershed group would like to take the lead in conducting future field verifications of sediment loading and sources with your help.

**Response 4.1:** The modeling techniques used during development of sediment TMDLs in the Shields are standard procedures that have been used in numerous EPA-approved TMDLs. Although we stress within the document that the modeled numbers are meant to show the relative loads from different sources and are not absolute numbers, DEQ works hard to best represent the existing conditions and what can be achieved via the application of all reasonable land, soil, and water conservation practices. EPA sediment TMDL development guidance for source assessment states that the basic source assessment procedure includes compiling an inventory of all sources of sediment to the water body and using one or more methods to determine the relative magnitude of source loading, focusing on the primary and controllable sources of loading (EPA 1999, page 5-1). Regulations allow that loadings “...may range from reasonably accurate estimates to gross allotments, depending on the availability of data and appropriate techniques for predicting the loading,” (Water quality planning and management, 40 CFR § 130.2(G)). This guidance is cited in **Sections 1.2, 6.2, and 7.6** of the document.

For the bank erosion and roads models, the models are built based on field measurements that are then extrapolated. We review the modeled results to determine if they seem reasonable but we do not have the resources for ground-truthing after model development. The hillslope erosion model was originally developed incorporating export

coefficients provided by the NRCS as a result of decades of field studies throughout MT and knowledge of conditions within the Shields watershed. After assessing the initial model results, DEQ determined that some of the modeled reductions were not feasible within the Shields and modified the model accordingly. As with our sediment assessment field procedures, we continually strive to refine our modeling techniques. Source refinement is built into the adaptive management procedure as discussed in the Implementation and Monitoring Section (8.7.1) of the public comment draft, and SVWG is encouraged to contribute to this process

**Comment 4.2:** The TMDL used the Bank Erosion Hazard Index (BEHI), which can be a semi-qualitative method that may not truly distinguish between natural channel migration rates and accelerated erosion caused by anthropogenic activities. We would prefer to look at a methodology that calculated channel migration rates using historic aerial photos, correlating that with adjacent land use and field measurements of riparian condition to determine natural versus human-induced bank erosion rates. This would provide a much better estimate of sediment volumes and sources.

**Response 4.2:** Although aerial analysis is an acceptable method of source assessment, its use is often limited by its availability and spatial scope of photos. The BEHI assessment method is also a method accepted by the EPA and is the method most commonly used by the MT DEQ for estimating bank erosion. The methodology has evolved since sampling was conducted for this project and does a better job of determining natural versus human-induced bank erosion. As noted in the public comment draft, this procedure will be incorporated into future sampling and could possibly be used in conjunction with available historical photos. Both of these items are noted in **Section 8.7.1**. “Since data collection for the source assessment, DEQ has modified several aspects of the procedure, including incorporating riparian buffer health into the hillslope model and better quantifying the contribution from bank erosion sources within the BEHI assessment. These modifications, as well as others identified by DEQ when follow-up monitoring commences, should be included if possible during follow-up monitoring.” “Aerial photos may also be available to assist with tracking bank retreat rates (SVWG 2008).”

**Comment 4.3:** It is sometimes difficult to escape the notion that there may be a bias against agriculture in the draft TMDL report. Many of the assertions in the Shields Valley TMDL document contradicts the Interfluv study of 2001 which states “As a whole, the Upper Shields Watershed remains in relatively good ecological condition,” and even grazed areas that are actively managed contribute to this good condition (p. 43). The Interfluv study does cite some issues that need improvement. Even so, in its characterization of the upper Shields it often finds only small stretches in which the riparian areas need attention. Most reaches have only 4-6% eroding banks, and at worst 13%. Whether any or all of these erosions are due to agriculture is uncertain and needs to be looked into more carefully. The draft TMDL often ignores many of the positive agricultural remarks of previous studies.

**Response 4.3:** TMDLs are required for water bodies that are impaired by pollutants, such as sediment. The TMDL must identify excess pollutant sources and the loading reductions necessary for the impaired water bodies to meet water quality standards. It is

important to do this in a way that shows an understanding of activities contributing excess pollutant loads and in a way that ensures that TMDL implementation priorities are focused on the appropriate land uses or activities. For nonpoint source pollution throughout Montana and the United States, the predominant land use in a watershed is typically also the most significant contributor of pollutant loading. The Shields sediment TMDLs do not represent a bias against agriculture, but instead reflect the major source category contributing to sediment impairment in the Shields TMDL Planning Area.

The document does discuss stakeholder efforts to make improvements within the watershed in **Section 2.2**, but beyond that, DEQ must focus the document on sources that need to be reduced to ensure that the TMDL meets all requirements for the document. Therefore, although many areas of the watershed are in good condition, the document must focus on sources that need to be reduced. As some areas are already in good condition, the reductions do not apply evenly across the landscape.

Historical land use is acknowledged within the document to be a source of sediment and habitat degradation that altered sediment transport but because the document is not trying to turn back time to achieve conditions that existed before historical alterations occurred, allocations are to existing source categories. In general, current agricultural practices are much improved over historical practices. As discussed in **Section 7.1.1**, “The allocation to agricultural sources includes both present and past influences, and is not meant to represent only current management practices. Many of the restoration practices that address current land use will reduce pollutant loads that are influenced from historic land uses.” Additionally, refining the source assessment, including bank erosion, is discussed in **Section 8.7.1**.

## 5. Data Quality

**Comment 5.1:** The MCAFS has commented on data quality in the Dearborn TMDL, and evaluation of public comments published in the approved TMDL’s for the Ruby, Sun, and Teton planning areas indicate other reviewers share our concerns. Sample size, bias, replicability, and spatial coverage are recurring themes. We understand that limited budgets and resources shape the feasibility of a data collection strategy; however, data quality remains an important consideration. Quality assurance project plans developed for each TMDL should include provisions for quantitative evaluation of data quality objectives (i.e. precision, bias, accuracy, and representativeness) for each parameter used in the TMDL process. DEQ should post these results with public review drafts so reviewers can evaluate the quality of the data used. Clearly, the repeated interest from numerous reviewers justifies the expense of disclosing these analyses.

**Response 5.1:** DEQ agrees that data quality is an important consideration. DEQ follows a Quality Assurance Project Plan (QAPP) and Standard Operating Procedures (SOPs) for collecting biological, chemical, sediment, and temperature data. The DEQ QAPP and SOPs are available at: <http://www.deq.mt.gov/wqinfo/QAProgram/index.asp>. The project-specific QAPP is cited in **Section 5.5.1**. Data typically come from multiple sources and in most cases it is not feasible to include all data and evaluation of data quality objectives within the document.

An extensive data evaluation of precision and bias for the impairment verification and TMDL measurements was provided to DEQ by its contractor. This evaluation is part of the project file and is available upon request. The analysis and findings of the data evaluation did in fact influence the selection of sediment targets for the Shields TMDL. The sampling design included the use of replicate measurements and after review of the data and data evaluation, DEQ determined that they were not truly replicates because different extents within the reach were used, and in some cases, separate reaches were used to test reproducibility. Because of this, the duplicate sampling results were deemed useful for evaluating the reproducibility of the measure *within the context of the sampling design*, but not the reproducibility of the measurements themselves where the same property and same location are measured. Therefore, DEQ did not eliminate the Width to Depth and Entrenchment ratio measurements from consideration as a target. Additionally, DEQ contends that the use of these measures, if performed at benchmarked sites and over a sufficient temporal time frame may be useful for determining long-term shifts in channel morphology. Likewise, the ranges of channel dimension described as supplemental indicators may be referred to in future channel restoration projects.

**Comment 5.2:** There is a lot of extrapolation associated with using the Deer Lodge National Forest (DLNF) reference for streams in developing the TMDL for the Shields River and its tributaries. We believe that conditions are quite different in the Shields Valley than they are in these higher elevation headwater streams. We want to use good-condition reaches of the Shields River as our reference reaches and develop an approved methodology along these lines with financial assistance from DEQ. The TMDL document should reflect this task.

**Response 5.2:** The Deer Lodge National Forest reference values are based on channel type and are not just derived from headwater streams. As currently suggested within the Implementation and Monitoring section of the document, refinement of reference conditions within the Shields watershed is a priority. Additionally, Section 8.7.3.1 states, “As identified in Goal 3 of **Appendix H**, the SVWG would like to establish reference sites within the Shields River Watershed; DEQ will provide technical assistance.”

## 6. TMDL Development

**Comment 6.1:** Omission of certain pollutants and streams from TMDL development is our last concern. Nutrients were among the probable causes of impairment for the Shields River on the 1996 303(d) list, and apparently, initial TMDL planning efforts included sampling and analysis intended to lead to a nutrient TMDL. The DEQ reported to MFWP that nutrients were accidentally left off the 2006 list, and because current guidelines require a pollutant to be included on both the 1996 and 2006 lists, a nutrient TMDL would not be included in this effort. An error in the management of the 303(d) list compilation is not a valid reason for not developing a TMDL for a listed pollutant, and DEQ should meet its obligation to address nutrient loading in the Shields River, not relegate the pollutant to a “possible” TMDL in the future.

Initial TMDL planning efforts addressed several streams for which no TMDL is presented in the public review draft. Rationale for not completing TMDL's relates to a lack of a pollutant for the listed streams, despite DEQ's precedence of completing TMDL's for streams where links between the pollution and pollutant are possible. The lack of a TMDL for Elk Creek is a significant concern, as a pollutant, siltation, was among the probable causes on the 1996 list. The 2006 list includes only pollution, despite the availability of data collected through the TMDL planning process, which likely confirms sediment as a pollutant. A looming deadline and large number of waters still without plans may provide the temptation to trim streams and pollutants from immediate consideration. In the cases of Cottonwood, Elk, and Rock creeks, DEQ has the data to develop TMDL's, and has established the precedence of developing TMDL's for streams where the listed pollution could be linked to a pollutant.

**Response 6.1:**

As noted in your comment, nutrients were not on the 2006 303(d) List; Nutrients have not been listed as an impairment cause for the Shields River since the 2000 listing cycle, when previous listings were reviewed for Sufficient Credible Data (SCD) as required by the amended state water quality law (75-5-702 MCA). The SCD review reflected in the 2000 listing cycle resulted in the conclusion that there was not sufficient credible data to identify nutrient impairments nor was there sufficient credible data to list the streams for sediment-related pollutants in Elk, Cottonwood and Rock Creeks. Therefore, sediment TMDL development is not required in the three tributaries and nutrient TMDL development is not required. Furthermore, as discussed in more detail in Response 2.1, nutrients were not accidentally left off the 2006 303(d) List. Although nutrient and sediment data were collected during TMDL development for water bodies that did not have those listings on the 2006 303(d) List, the DEQ decided it would prudent to follow a process of data evaluations and impairment determination through our Monitoring and Assessment group prior to any additional TMDL development. If nutrient and/or additional sediment impairments are identified via this process, then the DEQ will schedule additional TMDL development within the Shields watershed. Although TMDLs were not written for those water bodies, BMP recommendations within the document are recommended for the entire watershed, not just on the water bodies with TMDLs. Additionally, many of the BMPs that reduce sediment loading also reduce nutrient loading.

**Comment 6.2:** The Draft TMDL omitted important water quality impaired tributaries (Antelope, Elk, Rock, and Cottonwood creeks). In addition, the draft narrowly focuses on sediment-related impairments and ignores nutrients and water temperatures as factors impairing water quality in the Shields River and its tributaries. A number of streams are either arbitrarily omitted from the draft TMDL or mentioned in passing with equivocal statements that a potential TMDL may be completed at a later date. Elk Creek is a major tributary to the Shields River that was listed on the 1996 303(d) list as impaired by siltation. Substantial credible information exists affirming that sediment is impairing beneficial uses in Elk Creek....The draft TMDL does not refer to any currently available data for Elk Creek and omits the stream from the 2006 303(d) list. Omitting Elk Creek from the Shields TMDL fails to comply with an order issued by the District of Montana in *Friends of the Wild Swan, et al. v. U.S. Environmental Protection Agency*. CV 97-35-M-DWM (June 21, 2000, D. Mont).

Nutrients were identified on the 1996 303(d) list as a probable factor impairing water quality on the Shields and its tributaries, yet have been omitted from the draft TMDL. Substantial credible data collected during planning efforts confirmed nutrients were indeed impairing water quality in the Shields River.

**Response 6.2:**

See Response 6.1 regarding TMDL development. See Response 3.1 regarding water temperature and sufficient and credible data. Antelope Creek was on the 2006 303(d) List for solids (suspended/bedload). As discussed within **Section 1.3** and **Section 5.6.1.2** of the public comment draft, data collected to assist with TMDL development suggest the Antelope Creek solids listing is actually more closely related to nutrient sources instead of sediment sources. Although a TMDL has not been prepared at this time, additional monitoring has been recommended to determine whether a sediment and/or nutrient TMDL will be necessary. Additional data for Elk Creek is mentioned in **Section 1.4** as well as the possibility of future TMDL development for that water body following DEQ's formal beneficial use support assessment process. TMDL development within the Shields River watershed is compliant with the court order mentioned in **Section 1.3**; the document addresses all pollutant listings from the 2006 303(d) List that were also on the 1996 303(d) List. The court order referenced in the document pertains to an Amended Judgment entered into the U.S. District Court for the District of Montana, Missoula Division on November 18, 2004 regarding Friends of the Wild Swan Inc., et al., v. US. Environmental Protection Agency, et al., (CV 97-35-M-DWM).

## **7. Fisheries**

**Comment 7.1:** The Shields River watershed is unique as it supports strong populations of Yellowstone cutthroat trout throughout the basin. In contrast, this sensitive species has been largely extirpated throughout its range in other basins. The TMDL does not mention the abundance of Yellowstone cutthroat trout as one indicator of overall watershed health and excellent landowner stewardship, which we think is very important to include.

**Response 7.1:** Yellowstone cutthroat trout (YCT) are discussed in several portions of the document and as the most sensitive fishery within the watershed sediment targets within the document are geared towards protecting YCT within the watershed. DEQ understands that the Shields Valley Watershed Group has made improving YCT habitat a priority and has already implemented several projects to improve habitat. Those are noted within **Section 2.2** of the document. Although the document does not include reach-level or tributary descriptions of populations and habitat, population trends and general habitat conditions are discussed in **Section 4.5.1**. DEQ agrees that fish abundance is one indicator of watershed health, and as such, monitoring YCT population dynamics is included in the list of suggested parameters for future water quality monitoring in **Section 8.7.3.1**.

**Comment 7.2:** The emergence of whirling disease as a substantial threat to Yellowstone cutthroat trout underscores the need to address nutrients, as eutrophication favors Tubifex tubifex, the intermediate host for the causative agent of whirling disease. Furthermore, as these streams support Yellowstone cutthroat trout, DEQ, a signatory of the cutthroat trout conservation

agreement (MFWP 2007) has an obligation to incorporate the fish's conservation into its planning efforts. In general, the TMDL plan developed for the Shields River watershed is limited in its ability to conserve Yellowstone cutthroat trout.

**Response 7.2:** As discussed in Response 6.1, nutrients are outside the scope of this document, but may end up being addressed as part of a future TMDL development effort contingent upon future formal 303(d) assessment results. However, DEQ recognizes that sediment can also have a role in the distribution of whirling disease and its threat to YCT in the Shields River watershed is discussed within the Watershed Characterization (**Section 3.3.2**) and as a watershed trend monitoring recommendation in **Section 8.7.3.2**. As noted in Response 7.1, YCT are discussed in several portions of the document and as the most sensitive fishery within the watershed, sediment targets within the document are geared towards protecting YCT within the watershed. The overarching goal of the TMDLs and the entire Shields Water Quality Planning Framework is to improve water quality so that water bodies within the watershed support all of their beneficial uses, including fisheries and aquatic life. Achievement toward this goal is assessed by attainment of water quality standards, however, and it is beyond the scope of the document to address all possible factors limiting YCT.

## 8. General and Supportive Comments

**Comment 8.1:** The sediment modeling in section 6.0 shows sediment contributed on a sub-watershed level. This approach, which doesn't require the stigma of the inclusion of individual tributary streams on the 303(d) list, provides a practical way of prioritizing areas for potential projects. DEQ should make 319 funds available for projects on these tributary streams and sub-watersheds, even if they are not on the 303(d) list.

**Response 8.1:** DEQ agrees with this comment and fully supports a watershed-based approach. Although each TMDL is specific to that water body, it accounts for loading from that entire watershed, including water bodies that are not on the 303(d) list. Therefore, projects within a watershed with a completed TMDL are prioritized for funding instead of just the 303(d) listed water bodies.

**Comment 8.2:** We support improvement of: 1) native riparian vegetation, 2) instream fishery habitat and 3) instream flows as well as removal of fish passage barriers if they negatively impact fishery goals. We therefore support setting standards for water quality in Montana that are both realistic and achievable and take into consideration the many uses of these water resources.

In table E-1 under 'Pollutant Source Descriptions' in the Shields River document, Federal and County road structures are listed as potential pollutant sources. The Park Co. Rod and Gun Club does not support closure or limited use of any public roads that provide access to public lands and/or waters and we request our organization be kept informed, by the DEQ, regarding any potential road use changes.

**Response 8.2:** Thanks for the comment and your support. Roads are a sediment source in the Shields watershed but no road closures are recommended within the document. Road BMPs are recommended and discussed in **Section 8.0** and **Appendix D** and focus on surfacing and drainage improvements to decrease road-associated sediment loading. DEQ has no regulatory authority to close or limit the usage of roads. Changes in road management are under the responsibility of the owner, and DEQ is not a land management agency. Road ownership in the Shields watershed includes private landowners, the State (primarily MDT), the county, and the USFS. Changes to road usage on USFS land are referenced in **Section 2.2** and are discussed within its latest Travel Management Plan for the Gallatin National Forest (USFS 2006). During the 5-year review period for the TMDLs in this document, DEQ may review changes in road usage that occur between now and then, but DEQ does not typically track changes in road usage.

**Comment 8.3:** The Shields River TMDL document is thoroughly researched and well written. The Shields Draft TMDL does an adequate job of incorporating the GNF management in the Shields watershed and accurately frames anticipated GNF management/rehabilitation activities such as continued road sediment reduction such as the Upper Shields loop road spot surfacing and the surface drainage improvements in the Smith Creek area to reduce road sediment, continued road decommissioning, improved grazing AMP's, and aggressive management of Yellowstone Cutthroat trout habitat. There are no specific management constraints on projected GNF management in the plan. We concur with the comparable to reference condition goals for water quality parameters listed in Table 5.2 and conclude that the water quality targets in Table 5.411 are reasonable.

The Appendix H Goal 3 gives a specific recommendation to monitor Yellowstone Cutthroat trends, identify and prioritize stream reaches for fish habitat improvement, and to prevent fish entrainment. These recommendations are very compatible with the GNF Fisheries Strategic plan.

At this time we don't see any specific recommended adjustments to the Shields River TMDL document. We look forward to continuing to coordinate with the Montana DEQ in future management of National Forest lands in the Shields drainage and the continued implementation of rehabilitation projects, travel plan implementation, fuels treatments, and updated AMP plans.

**Response 8.3:** Thank you for your comments and support. Your comments are noted.

## REFERENCES

Montana Department of Environmental Quality. 2006. Standard Operating Procedure, Water Quality Assessment Process and Methods (APPENDIX A to 303(d) 2000 - 2004). WQPBWQM-001, Rev#: 02. Helena, MT, Montana Department of Environmental Quality.

USDA Forest Service. 2006. Gallatin National Forest Travel Plan Final Environmental Impact Statement. Bozeman, MT, Gallatin National Forest, Bozeman Ranger District.