2002 Montana 303(d) List

Introduction

This report presents the results of water quality assessments conducted for Montana waters by the Montana Department of Environmental Quality (DEQ). These assessments are conducted in accordance with the federal Clean Water Act and the Montana Water Quality Act as part of a process intended to protect and improve the quality of rivers, streams, lakes, and wetlands in the State.

The fundamental goal of the federal Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters". While the Act "recognizes, preserves, and protects" state responsibility for water quality protection and planning, it assigns overall administration of the Act to the United States Environmental Protection Agency (EPA).

The Act requires states to adopt standards for the protection of surface water quality. Montana's standards are designed to maintain water quality that will support the beneficial uses identified by the Montana Water-Use Classification System. Classifications assigned by this system require waters to support some or all of the following uses: drinking and food processing; bathing, swimming and contact recreation; growth and propagation of fish and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply. The water quality standards employed to maintain these uses address changes from natural conditions for such parameters as coliform, dissolved oxygen, pH, turbidity, temperature, color, toxics, and other harmful substances.

Changes from naturally occurring water quality conditions may result from either point source or nonpoint source discharges. Point source discharges have an identifiable waterbody entry point (e.g., sewage treatment plant pipe, canal, etc.); nonpoint sources contribute pollutants to waters over an extended area. Agricultural operations and timber harvest activities are examples of nonpoint sources. Point source discharges are regulated by the state's discharge permit program. Nonpoint sources are addressed by encouraging voluntary use of "Best Management Practices" (BMPs) designed to reduce the water quality impacts of land use activities. These BMPs and permits are the primary means for maintaining or restoring Montana water quality, and often they are sufficient to accomplish this purpose.

When permits and BMPs prove inadequate to fully protect water quality, the provisions of Section 303(d) of the federal Clean Water Act come into effect. The language of this section and related EPA regulations requires states to identify waters where quality is impaired (does not fully meet standards) or threatened (is likely to violate standards in the near future). Each two years the states are required to submit a list of these impaired or threatened waters to the EPA. This "303(d) List" report must also include a prioritization of the listed waterbodies for the development of plans identifying measures needed to bring water quality into compliance with the applicable standards. Because one element of some of these plans involves estimating the "total maximum daily load" (TMDL) of pollutants that a waterbody can handle and still meet standards, these plans are often referred to as "TMDL Plans."

Montana has been developing and submitting 303(d) Lists in compliance with the federal Clean Water Act every two years since 1992. Initially there was no guidance relating to this process in Montana law. Then, in 1997, amendments to Montana water quality law addressed how the state would go about meeting the federal requirements for the development of the 303(d) Lists. The 1997 legislative changes which have had the greatest impact on the material in this 303(d) report include mandates to the Department of Environmental Quality to:

- monitor state waters to accurately assess their water quality;
- develop and maintain a system to ensure that 303(d) listing and priority ranking decisions would be made only when sufficient credible data to support those decisions are available;
- consider 13 specified factors in prioritizing water bodies for TMDL plan development and rank waterbodies as high priority only after first validating the data necessary to support the ranking;
- consult with a statewide advisory group and with local conservation districts and watershed advisory groups in revising the list of impaired waters and establishing new priority rankings.

In response to these mandates DEQ developed a methodology for ensuring that the water quality assessments conducted to make listing decisions are based on sufficient credible data. A prioritization process employing the 13 specified factors and involving substantial stakeholder consultation also was established. These tools were first used to prepare the 2000 303(d) List.

Montana's 303(d) Assessment Process

Montana water quality law requires that placement of waterbodies on the 303(d) List must be supported by "sufficient credible data" to ensure that such listings are justified. This sufficient credible data threshold applies both to the reassessment of waters listed on previously published 303(d) Lists and to the consideration of any additional waters for listing.

DEQ uses a two-step process to assess waters in compliance with the legislative mandate. First, DEQ searches out the available data for a waterbody and evaluates whether there are sufficient credible data to make a valid and reliable determination of beneficial use support. Then, if the data are adequate, DEQ compares the data with the applicable water quality standards to make a beneficial use-support determination. The following paragraphs provide an overview of this process. Readers wanting a detailed explanation of the process along with the tables and criteria used in making the sufficient credible data assessments and beneficial use determinations will find these in Appendix A.

Identification of Available Water Quality Data

In recent years DEQ's water quality monitoring data along with information from other selected sources have been incorporated into computerized water quality databases. These records and databases provided a basic foundation, which is updated as new monitoring data is collected by DEQ or obtained from others sources. Then, at the beginning of each reassessment cycle, DEQ sends out requests for information to several hundred individuals, organizations, and agencies involved in water quality monitoring and management. Responses to these requests provide much useful information as well as references to additional materials available from other sources. Searches for these references and general searches for additional water quality information are conducted on the library catalogs and databases of Montana university system and resource agency libraries. The data and information obtained from these outside sources are combined with the

results obtained from DEQ's ongoing monitoring efforts to provide the basis for water quality assessments.

Sufficient Credible Data (SCD) Assessment

Montana law defines sufficient credible data (SCD) as "chemical, physical, or biological monitoring data, alone or in combination with narrative information, that supports a finding as to whether a water body is achieving compliance with applicable water quality standards" (75-5-103 MCA). This definition is consistent with a model developed by EPA for assessing the beneficial uses of streams on the basis of a combination of physical (habitat), biological, and chemical monitoring (U. S. EPA 1997). For example, EPA recommends that monitoring for aquatic life use support include the collection of habitat and community-level biological data as well as the measurement of chemical parameters in water and sediment.

Montana DEQ drew on the EPA model to develop sufficient credible data criteria and decision tables to evaluate data adequacy for lakes and wetlands as well as for streams. Methods and criteria are specified to evaluate SCD for the Montana Water-Use Classification System beneficial uses. These uses are: 1) drinking, culinary use, and food processing; 2) aquatic life support for fishes, associated aquatic life, waterfowl, and furbearers; 3) bathing, swimming, and recreation; 4) agriculture supply; and, 5) industrial supply.

The sufficient credible data review focuses on four components that contribute to data validity and reliability for water quality assessment:

- Technical soundness of methodology
- Spatial/temporal coverage
- Data quality
- Data currency.

In most cases a finding that there is sufficient credible data will result when several types of data have been collected over a period of time using sound technical methods and there are no indications of recent changes to the water body that would invalidate previously obtained results.

Aquatic Life and Fisheries Support SCD – The Montana Water-Use Classification System requires that all waters support the "growth and propagation of fishes and associated aquatic life, waterfowl, and furbearers" (ARM 17.30.604-624). Based on this requirement, the "aquatic life" assessment considers fish, invertebrates, aquatic plants, and associated wildlife. Therefore, the aquatic life sufficient credible data assessment entails an evaluation and scoring of the following data categories:

> **Habitat/physical** – includes qualitative and /or quantitative riparian and aquatic vegetation information, and hydrogeomorphic characteristics and functions.
>
> **Biology** – includes chlorophyll *a* data; and aquatic biological community data such as fish, macroinvertebrates and algae; and wildlife community characteristics.
>
> **Chemistry/toxicity** – includes bioassay, temperature and total suspended sediment data and chemistry data such as toxicants, nutrients, and dissolved oxygen.

Ideally, SCD for aquatic life would include data pertaining to all three categories; but very strong evidence relating to two data categories can constitute SCD for an aquatic life beneficial use-support determination.

Drinking Water and Contact Recreation SCD – For drinking water and contact recreation uses, evaluation of multiple data categories is not necessary; the data are simply rated as sufficient or insufficient for each of these uses based on tables which apply the four general components of data adequacy to the specific standards indicating drinking water and contact recreation use support.

Agricultural and Industrial Water Supply SCD – Generally, if there are sufficient credible data for drinking water, contact recreation, and aquatic life beneficial use-support determinations, there are also sufficient data to make agriculture and industry beneficial use-support determinations. However, additional salinity and toxicity information may be required for agriculture supply use-support determinations.

Beneficial Use-support Determination (BUD)

Once it is ascertained that sufficient credible data are available for a waterbody, the assessment process moves to determine the level of beneficial use support. The degree of support for each beneficial use is rated using four categories:

- Full support
- Partial support
- Non-support
- Threatened

A use is fully supported when all water quality standards applicable to that use are met. When one or more standards are not met due to human activities, the water body is either "not supporting" or "partially supporting" the beneficial use tied to that standard. A use that is currently fully supported but for which observed trends or proposed new sources of pollution indicate a high probability of future impairment may be rated as "threatened." Because the standards for determining use support are different for each use, the use-support determinations for the various uses of a waterbody are often not the same. Only those beneficial uses that apply to the particular water-use classification of a waterbody are evaluated for that waterbody.

Beneficial Use Determination, Aquatic Life and Fisheries – Making aquatic life and fisheries use-support determinations can be a complex process because of the amount and variety of information that may bear on the decision. In some cases the reviewer will evaluate, compare, and weigh many bits of physical, biological, chemical, and habitat data in reaching the aquatic life and fisheries use-support determinations for a waterbody. In other cases clear evidence of use impairment or support is provided from only one or two of the aquatic life data categories (habitat/physical, biology, and chemistry). Where there is a wide variety of data with no single element that by itself supports a conclusion, the evaluator follows a process employing criteria that lead to a determination based on the overall weight of evidence. A slightly different process is followed when data are not available for all the categories, yet there is clear evidence to support a particular determination. Whatever the process used, data showing that aquatic life and fisheries uses are “moderately impaired” result in a “partially supporting” determination. Data indicating that aquatic life and fisheries uses are “severely impaired” result in the waterbody being listed as “not supporting” these uses.

Beneficial Use Determination, Other Uses – Beneficial use determinations for the drinking water, contact recreation, agriculture supply, and industrial supply uses are relatively straightforward. For each of these uses criteria based on water quality standards are listed in a table, the available data for a waterbody are evaluated using the listed criteria, and an overall use-support determination is made based on consideration of all the criteria for which data are available. In some situations the overall rating will result from clear evidence of support or impairment associated with one or two criteria; other determinations may be derived from indications of water quality derived from the entire set of criteria which apply to a particular use.

Note: A detailed presentation of the Montana DEQ water quality assessment methodology is provided in Appendix A.

Documentation of Water Quality Assessments

The data and maps in this report summarize the results of DEQ's assessments. They are not the full 2002 303(d) List record. The full record consists of three parts:

1. This report, the Montana 303(d) List, A Compilation of Impaired and Threatened Waterbodies in Need of Water Quality Restoration, which constitutes Montana's 303(d) list submission to the EPA for the year 2002.

2. Data files for each waterbody evaluated during the "sufficient credible data / beneficial use determination" assessment. These files may contain water quality data, maps, photographs, references to relevant documents, and references to electronic information sources. They may be reviewed at the office of the DEQ, Monitoring and Data Management Bureau.

3. Sufficient Credible Data/Beneficial Use Determination Assessment Record Sheets for each waterbody segment. The actual assessment of each water is documented on a multi-page Excel spreadsheet. The data sources used in the assessment are listed on these sheets along with the factors considered and how those factors were used to reach the assessment determination. A hard copy of the record sheet for each waterbody segment is included in the segment files described above. Electronic copies of these record sheets also are linked to the EnviroNet 303(d) interactive database "full report" pages.

Reassessment of De-listed and Impaired Waters

When DEQ applied the "sufficient credible data" screen required by the 1997 Montana water quality law amendments, it determined that sufficient data were not available to reach use support determinations for approximately 500 waters which had appeared on previously compiled 303(d) lists. In accordance with the requirements of the 1997 amendments, these waters were not simply forgotten; they were placed on a list of waters to be reassessed as soon as practicable. See Chapter 3 of Montana's 2000 303(d) List.

As of September 2002 assessments have been completed on 86 waters from the 2000 reassessment list. Of these waters, 55 have been added to the 2002 303(d) List of impaired waters, while 12 have been found to be fully supporting all beneficial uses. Another 19 waters remain on the reassessment list. About a third of these 19 waters are segments which were split off from larger reassessment list segments because the assessments revealed that the original segment was not a homogeneous unit. Others were waters where the reassessment found no impaired uses, but the

data obtained revealed a need for additional study to resolve some particular issues. The waters remaining on the reassessment list are identified in Appendix F.

All that is required to place a water on the 303(d) impaired list is sufficient credible data indicating that one beneficial use is impaired. Many waters are listed based on information relating to one or two uses even though the data is not sufficient to reach use support determinations for other uses. Thus, it is often necessary to reassess waters identified as impaired for some uses to determine if other uses are fully supported. As of September 2002, DEQ has completed reassessment of 54 waters which were included on the 2000 303(d) impaired list. Most of these reassessments found additional uses to be impaired or produced additional information about the causes and sources of impairment. In one case (Trout Creek in the lower Clark Fork River drainage) it was found that data relating to a different Trout Creek had mistakenly been used in its assessment, and that the limited data available for this Trout Creek did not support an impairment determination.

Seven new waters which have not appeared on any previous impairment or reassessment list also have been added to the system and assessed since the 2000 303(d) List was published. Five of these waters are impaired for one or more uses, and two are fully supporting all uses.

Finally, samples and data have been collected for about 20 to 30 additional waters which were either listed as impaired on the 2000 303(d) List or were identified for reassessment. Once this material has been compiled and analyzed, it will be used to complete assessments for these waters.

This report does not include a separate listing of waters scheduled for assessment during the next two years. The reason is that (as will be discussed in detail in the next section of this document) DEQ is operating under a planning schedule adopted in response to a court order. This order is under appeal, but until the appeal is resolved all DEQ water quality assessment and planning is driven by that schedule. During 2002 and 2003 DEQ's reassessment efforts are focused on waters (from either the impaired or the reassessment lists) located in planning areas scheduled for plan completion during 2002 – 2004. The planning schedule for the watershed planning areas in the state, which lists the 2002 impaired waters located in each area, is provided by Appendix E. The actual schedule submitted in response to the court order, which includes a listing of all impaired **or** reassessment list waters in each watershed planning area, may be reviewed online at http://www.deq.state.mt.us/ppa/mdm/TMDL/2000TMDLPlanningSchedule.pdf

Prioritization for TMDL Development

In compliance with the provisions of the 1997 water quality law amendments, DEQ adopted a new methodology for prioritizing waters for TMDL development. This methodology, first used in preparing the 2000 303(d) List, was developed with the assistance of the Statewide TMDL Advisory Group. It employs a weighted scoring system, based on the 13 prioritization criteria mandated by the Montana Water Quality Act, to evaluate each impaired or threatened water. The system assigns a high, moderate, or low priority for the preparation of a TMDL for each water.

In June 2000 the United States District Court of Montana ordered EPA to work with the State of Montana to adopt a schedule which would assure the development by May 5, 2007 of all necessary TMDLs for waters on the 1996 303(d) List. The court further ordered that this schedule be adopted by November 1, 2000. In order to avoid having two separate schedules for the development of

TMDLs in effect at the same time for overlapping sets of waters, DEQ elected to adopt a single schedule addressing waters appearing on either or both the 1996 and 2000 lists of impaired waters.

DEQ and EPA considered a several possible scheduling options and selected an approach which identified 91 watersheds in the state and scheduled each watershed for TMDL development based upon factors including the individual water body prioritization scores, grouping waters having similar or interrelated problems, availability of data, and the degree of public interest and support. Using watersheds to prioritize and schedule TMDLs made the process relatively independent of the list being considered (1996, 1998, or 2000). Both the 2000 priority rankings of individual water bodies and the watershed TMDL development schedule are included in the Montana 303(d) List publication which was approved by EPA on January 29, 2001. The same schedule for TMDL development was submitted under separate cover in response to the court order.

EPA has filed an appeal of the June 2000 District Court of Montana order. Until this appeal is resolved, DEQ must follow the TMDL schedule developed in response to the order. While the agency can do some limited rescheduling, it does not have the latitude to do a full schedule revision as an element of the 2002 303(d) List update. The limited number of waters which are newly identified as being impaired by the 2002 cycle beneficial use determinations also would not justify a complete rescheduling effort. For these reasons, DEQ adopted the following scheduling rationale for water body impairments included on the 2002 303(d) List:

1. Any beneficial use impairment which had previously been identified on either the 1996 or the 2000 303(d) Lists will have a TMDL developed in accordance with the court order schedule (with minor modifications to that schedule listed below).

2. Any beneficial use impairment identified for the first time on the 2002 List will have a TMDL developed within 10 years of EPA's approval of the final 2002 303(d) List update. If possible TMDLs will be developed for these waters at the same time that TMDLs are prepared for other waters in the same watershed (under the court order schedule).

The court order schedule provides flexibility for DEQ and EPA to respond to contingencies – so long as the pace of TMDL development is maintained. TMDLs for some planning areas or waters may be delayed, if others are accelerated to maintain the pace. DEQ identified a need to reschedule several planning areas and individual waters and presented the proposed schedule revisions for consideration by the Statewide TMDL Advisory Group on March 20, 2002. The Group provided positive comments on the changes. These changes are displayed in Table 1. Appendix E lists the TMDL development schedule, as modified, for all waters on this 2002 303(d) List.

A recent change to EPA policy will also have some effect on the TMDL development schedule. On July 23, 2001, EPA notified DEQ that it would no longer take action to approve or disapprove TMDLs for waters impaired solely by "pollution". EPA will continue to approve or disapprove TMDLs for waters impaired by "pollutants". "Pollutants" include specific substances such as nutrients, sediment, or metals, while "pollution" is a water quality problem created by conditions such as flow alterations or habitat degradation. DEQ believes there are very few situations where a pollutant is not associated with pollution. For example, sediment and elevated water temperature are pollutants frequently associated with flow alteration and riparian habitat degradation. DEQ's approach to addressing waters listed only for will be to first determine if the water in question is, in fact, impaired by a pollutant. If it is, a TMDL will be developed. If not, DEQ will work with local interests, on a low priority basis, to develop and implement a watershed restoration plan.

TABLE 1: TMDL DEVELOPMENT SCHEDULE REVISIONS

Schedule		Planning Area or Waterbody	Explanation of Change
Original	Revised		
2006	2002	Upper Lolo Creek (Portion of Lolo Planning Area)	Cooperation between DEQ, USFS, Plum Creek Timber, and the Montana Department of Transportation is accelerating TMDL development.
2003	2002	Big Creek (Portion of Flathead Headwaters Planning Area)	Big Creek was impacted by forest fires and the USFS considers it a high priority for watershed improvements and TMDL development. DEQ and the USFS are making good progress towards developing TMDLs.
2005	2002	Tongue Planning Area	TMDLs are needed to protect water quality and guide coal bed methane development
2006	2002	Powder Planning Area	TMDLs are needed to protect water quality and guide coal bed methane development
2007	2004	Prospect Creek (Portion of Lower Clark Fork Planning Area)	The Green Mountain Conservation District, USFS, and DEQ are ahead of schedule in developing TMDLs for Prospect Cr.
2005	2003	Upper Madison Planning Area	The Upper Madison Planning Area is largely comprised of federal land and good progress is being made through a partnership between DEQ and the USFS.
2002	2003	Big Spring Planning Area	DEQ needs to gather more data and perform additional analyses to complete TMDLs for Big Spring Creek. The analyses need to focus on the source of PCBs.
2002	2003	Benton Lake	DEQ needs to perform additional analyses and prepare a substantial document to complete TMDLs for Benton Lake.
2002	2003	St. Regis Planning Area	DEQ needs to analyze temperature data and the effects of temperature on the cold water fishery.
2003	2007	Missouri Mainstem (Portion of Bullwacker - Dog Planning Area)	This portion of the Missouri River mainstem is more logically addressed concurrently with the upstream sections of the Missouri River.
2003	2004	Nine Mile Planning Area	DEQ needs to gather additional data to complete the TMDLs
2007	2003	Bobtail Creek (Portion of Kootenai Planning Area)	The Bobtail Creek watershed is largely federal land. A partnership between DEQ, the USFS and the Kootenai Network is resulting in good progress on TMDLs.
2005	2004	O'Fallon Planning Area	Local conservation districts completed a substantial amount of assessment work on many of the streams in the O'Fallon Planning Area facilitating early completion of TMDLs.
2005	2004	Grave/Therriault Creeks (Portion of the Tobacco Planning Area)	The Grave Creek and Therriault Creek watersheds are largely comprised of federal land and the partnership between DEQ, the USFS and the Kootenai River Network is resulting in good progress towards TMDLs.
2003	2005	Lower Gallatin Planning Area	DEQ needs to gather additional data to complete the TMDLs.
2003	2005	Bighorn Lake - Shoshone Planning Area	DEQ needs to gather additional data to complete the TMDLs.
2003	2005	Judith - Arrow Planning Area	DEQ needs to gather additional data and develop local participation to complete the TMDLs.
2004	2005	Shields Planning Area	DEQ needs to gather additional data to complete the TMDLs.
2004	2005	Upper Smith Planning Area	DEQ needs to gather additional data and develop local participation to complete the TMDLs.
2002	2006	Upper/Middle Musselshell Planning Area	DEQ needs to gather additional data to complete the TMDLs.
2003	2007	Big Otter Planning Area	DEQ needs to gather additional data to complete the TMDLs.

Public and Agency Consultation

Consultation Actions

Background

Both federal and state law require DEQ to engage in extensive consultation with the public both when it develops the procedures to be used for assessing waters and setting priorities for TMDL planning and when it uses those procedures to assesses waters and schedule impaired waters for plan development. In terms of public consultation, the 2002 303(d) List update stands very much on the shoulders of the 2000 List public consultation process.

Because the 2000 List was the first to be developed using new procedures adopted to respond to the 1997 amendments to state water quality law, these procedures received especially close public review. During their development DEQ obtained assistance and reviews from a wide array of state, regional, and national water quality assessment experts; consulted the statewide TMDL advisory group; and discussed the proposals with a number of stakeholder groups around the state.

The Draft 2000 303(d) List package was subject to an unusually long and intensive public comment period extending from April 20 to September 5, 2000. It was publicized through legal notices and reports in the Montana media as well as by letters sent to groups and individuals known to be interested in water quality issues. At meetings held in 17 cities around the state DEQ staff reviewed both the listing process and the proposed listing decisions for waters in the vicinity of that particular meeting. The public comment received was used to revise the draft list to produce a final list for submission to EPA. Region VIII of EPA provided yet another opportunity for public comment before the Region Administrator gave final approval to Montana's 2000 303(d) List on January 29, 2001.

The 2002 303(d) List update makes only minimal changes to the 2000 List. The concepts, methods, and documentation tools used to develop the 2002 water quality assessments are unchanged from those employed in 2000, and new assessments have been done only for those waters for which new credible data are available. Of the 466 waters on the 2000 List, 426 are listed exactly as they were on the 2000 List, 39 waters remain listed but have some change to the listing information, and one water has been removed from the list. 55 waters, not listed in 2000 have been added to the 2002 List. (See Appendix B for a list of waters where previous impairment or cause listings have been deleted). The prioritization process developed and used in 2000 also has not been altered. In fact, the planning priorities identified in the 2000 list formed the basis of a multi-year plan development schedule adopted in response to a court order. Only 21 planning completion dates specified by the 2000 List schedule are modified by the 2002 List, with the due date being accelerated for 9 plans and delayed for 11 plans.

2002 List Development Consultation

In September 2001, DEQ sent out over 600 letters to stakeholders (local water groups, federal, state, and local agencies, private groups, and individuals with water quality interests) asking them for any water quality information they might have which could be used to update the 303(d)

assessments. Many of these stakeholders had provided information during the 2000 list update and some provide data to DEQ on a continuing basis, so the amount of information obtained in response to this letter was limited. The DEQ monitoring and assessment staff also receive data from many of these entities by means of regular working contacts. Because local Conservation Districts are especially good sources of recent data, DEQ staff members attended all of the fall 2001 regional meetings of the Montana Association of Conservation Districts to ensure that CD members were aware that a new list update process was underway and to make a direct appeal for any available information.

Publication of the Draft 2002 303(d) List initiated a 60-day comment period (June 7, to August 5, 2002) to obtain public review of DEQ's updated listing determinations and planning schedule. Legal notices placed in five newspapers around the state provided formal notice of this comment opportunity. A news releases announcing the comment period was issued to the media and was mailed to approximately 600 water quality stakeholders. A second release focusing specifically on the proposed planning schedule changes was published about a week after the first release. This second release was also mailed to about 300 individuals and organizations on the Montana Watershed Coordinating Council mailing list.

The actual 303(d) List materials which Montana submits to the EPA consist of electronic database, text, and GIS map files. Recognizing that few members of the public would have the computer software needed to read these files, the DEQ arranged to have an interactive version of the draft list published on the Internet by the Montana State Library, Natural Resource Information System (NRIS). This site is readable using any computer with Internet access.

All of the comment period announcements as well as the NRIS site identified both a standard mailing address and an email address for submitting comments on the draft list to DEQ. Nearly all of the comments received were submitted using the email address.

As each comment was received it was logged in, copied for the Record of Comments, reviewed briefly, and distributed to the DEQ staff best able to use and respond to the comment content. Comments relating to the assessment of specific waters were relayed to monitoring staff, who reviewed the assessment of the water in question to determine if the comment provided a basis to revise the listing determination. Comments responding to the proposed changes to the planning schedule were referred to the DEQ water quality management section for consideration. Finally, comments which did not address specific waters but raised general methodology or policy issues were reviewed by DEQ management and legal staff.

Consultation Results

Comments Relating to Specific Waters or to Causes of Impairment

Questions, comments, and information relating to assessment determinations caused DEQ to review its draft listings of 30 waterbody segments. For the most part the review confirmed the original assessment determinations. When information submitted did produce changes to the draft assessments, the modifications varied from significant listing changes to minor revisions to specific data elements:

1. The German Gulch drainage in the upper Clark Fork River basin was added to the list of threatened and impaired waters, and the Trout Creek which flows into Noxon Reservoir was

removed from the list. This removal resulted from finding that data which did not relate to this Trout Creek had been used to assess it as being impaired.

2. The listed segment was corrected for Blood Creek in the Musselshell River drainage. Commentors pointed out that although the Assessment Record Sheet documented impairment of only the lower 30 miles of this stream, the listing entry showed all 60 miles of the stream as impaired.
3. Additional causes of impairment were identified for 7 waterbodies already listed as impaired by different causes. These changes involved adding specific nutrients, or nutrients in general, as an impairing factor for waters in the Upper Clark Fork and Bitterroot River drainages.

In several cases where comments suggested making changes to the listing status of specific waters, DEQ's review found that the available data supported the original listing or that there were insufficient data to support the suggested modification. One comment recommended that the Little Bighorn River should be listed as impaired by pesticides. EPA has not approved the State's water quality standards within the Tribal Reservations in Montana and will not approve portions of the 303(d) list that might include waters within the Reservations. Consequently, the responsibility of listing waters, such as the Little Bighorn River, and developing TMDLs for those waters is the responsibility of EPA and the respective tribal governments. Yet another comment virtually demanded that six streams in the Bitterroot and Clark Fork drainages be added to the List as impaired for cold water fishery use. DEQ staff found that five of these six streams are, in fact, already listed as impaired cold water fisheries.

One organization raised concerns regarding the lack of reporting of toxic chemicals in Montana's waters noting "in the proposed 2002 draft, there are zero waterbodies listed as impaired for PCBs, two for total toxics, and only one for pesticides." While DEQ shares the concern regarding the many waters in the state for which available data are not adequate to support toxic chemical assessments, it should be noted that in actuality six major waterbodies (Flathead Lake, Whitefish Lake, Whitefish River, Bib Spring Creek, and two segments of the Missouri River) are listed as impaired by PCBs. Three waters are also listed for impairment by priority or non-priority organics. The draft list also did identify 196 waters as impaired by heavy metals (arsenic, cadmium, copper, chromium, lead, mercury, selenium, zinc).

The DEQ has been collecting PCB samples in the water column and sediments of state waters for over three decades. Our database shows 147 PCB samples collected by our agency alone, 113 of which were water-column measurements. Among the water column samples, only 4 indicated measurable quantities above detection limit. PCB's have an unusually high bioconcentration factor (31,200), and are much easier to detect in fish tissue and sediments than in the water column. A bioconcentration factor is different than bioaccumulation, as it takes into account only the accumulation of the compound into the fish flesh resulting from direct absorption from the water, not uptake from the diet.

The Department agrees wholeheartedly with comments suggesting that there "should" be more testing of state waters for PCB's, pesticides, dioxin, and other toxics. The lack of adequate resources to survey for all causes of water quality impairment is a nationally recognized problem. There are, however, some points which should not be forgotten when the issue is the water quality status of waters as reported in the 303(d) List.

1. Waters are included on the 303(d) list as impaired by a particular pollutant only when sufficient credible data show exceedences of the established standards. DEQ perceives that its PCB data mentioned above are consistent with the findings of a USGS national survey (Kolpin, et al from *Environmental Science and Technology, 2002*) which reported that while organic

wastewater contaminants were "found in 80% of the streams sampled….Measured concentrations for this study were generally low and rarely exceeded drinking-water guidelines, drinking-water health advisories, or aquatic-life criteria."

2. Although the Department is seeking to increase its sampling of surface waters for the presence of pesticides and other toxics, it does not foresee any possibility in the near future of having the resources to routinely apply these tests to all state waters. This does not mean that there is no mechanism in place for identifying impairments associated with these causes. First, information from others sources and agencies is used either to make assessments or to identify where specific testing should be conducted. For example, even though the MPDES permitting process should ensure that discharges allowed under permit do not cause standards violations, knowledge of permitted discharges can help DEQ select locations for specific testing. Also, when biological monitoring (which is a part of virtually all water quality monitoring in the state) identifies that biological communities are impaired, finding the cause of this impairment becomes a priority concern which (particularly if likely sources are present) would trigger specific testing for toxics.

3. DEQ recognizes that new research results are regularly being published which may suggest that established standards for specific pollutants need to be reconsidered. However, the 303(d) listing process requires use of the established standards, it is not the mechanism for changing them. There are specific legal and technical processes for setting and revising standards under both federal and state law.

One commentor noted that DEQ must include all impaired streams, including those impaired by flow alteration, nonpoint source pollution, and habitat alteration, and should not make arbitrary distinctions between "pollutants" and "pollution" for listing decisions and TMDL development. Another commentor stated, "The 303(d) list does not address flow as a pollutant or pollution." The 2002 303(d) List makes absolutely no distinction between waters impaired by "pollution" or by "pollutants," and neither does it differentiate between point and non-point sources. "Flow alteration" is specifically identified as a cause of impairment 204 waters listed on the Draft 2002 303(d) List, while "other habitat alterations" are listed as a cause of impairment for 333 waters (more than 63% of all waters on the list). Many of the waters on the list are, in fact, listed solely on the basis of "pollution" impairments.

The issue of how "pollution" impairments are addressed in TMDL plans is a planning issue, not a 303(d) List issue. It is an issue which has been -- and is most appropriately -- raised during comment periods provided for draft plans. DEQ will simply note here that, EPA has notified the State that it will no longer approve or disapprove TMDLs for waters impaired solely by "pollution." As a result, DEQ intends to address "pollution" caused impairment by first determining whether or not a "pollutant" is contributing to the impairment. If so, then DEQ will develop a TMDL for EPA's approval. If not, DEQ intends to assist local watershed groups with the development of a restoration plan for that water body even though no TMDL is necessary under EPA's interpretation of the federal Clean Water Act.

One comment suggested that DEQ must list all streams potentially affected by coal bed methane (CBM) development in the Tongue and Powder River drainages as "threatened" and must address and document CBM related issues in its 2002 listing process. While DEQ recognizes that CBM development, if unregulated, could adversely affect the quality of water in the Tongue and Powder River drainages, this potential does not, by itself, support a determination that those waters are "threatened" by such development. Under State law, a water body is "threatened" if:

> *"sufficient credible data and calculated increases in loads show that the water body or stream segment is fully supporting its designated uses but threatened for a particular designated use because of: (a) proposed sources that are not subject to pollution prevention or control actions required by a discharge permit, the nondegradation provisions or, reasonable land, soil, and water conservation practices; or (b) documented adverse pollution trends."* § 75-5-103(31), MCA.

Listing waters in the Tongue and Powder basin as "threatened" on the 2002 303(d) List would not be consistent with this MCA language because (1) CBM development activities are subject to permit requirements and state water standards, and (2) available data are not sufficient to demonstrate either that these waters are currently fully supporting their designated uses or that there are documented adverse pollution trends.

DEQ and other agencies are engaged in an intensive data collection and assessment effort in the basins where CBM development is proposed. All waters which have appeared on **any** Montana 303(d) List are under study. Data collected during the 2002 field season are only now becoming available for use in the analyses. DEQ has hired a consultant to review recently-collected data to assist DEQ's re-assessment of de-listed waters in the area to determine whether or not those waters are impaired. The fact that many of the waters in this area are naturally saline and turbid makes reaching valid 303(d) listing determinations especially difficult. Since naturally-occurring conditions are not a basis for 303(d) listing, it is necessary to determine the relative contribution made by natural and human-caused sources in creating the water quality conditions observed. In addition, DEQ is in the process of setting water quality standards for conductivity and sodium adsorption ratio for these waters.

With new data only now becoming available for analysis and significant issues remaining to be resolved, DEQ is not ready to conclude assessments to accommodate the October 1 submittal deadline for this 2002 303(d) List. As the State finalizes its water quality standards, as the EIS process comes to closure, and as the mandated assessment process incorporates the 2002 data, DEQ expects to have credible information to support reasoned decisions on the impaired or threatened status of these waters. DEQ has scheduled the Tongue and Powder areas for TMDL development in 2002 and this new information will provide the state with the basis to set initial TMDL targets. DEQ plans a phased approach to developing the TMDL's and anticipates the development of initial TMDL targets and completion of an initial phase by the end of the year for these areas.

Comments Relating to Planning Schedule Changes

The Lolo National Forest and the Prospect Creek Watershed Council, commented on the proposal presented in the Draft 303(d) to accelerate the completion date for the Prospect Creek TMDL from 2007 to 2003. Between them, the Forest and the Watershed Council represent essentially all stakeholders involved in the Prospect Creek drainage. Both commented that other planning commitments and established timelines for studies needed for the TMDL would make it impossible to complete the TMDL in 2003. In concurrence with their recommendation, DEQ has now scheduled the Prospect Creek TMDL for completion in 2004. This change from a 2003 to a 2004 schedule date for the Prospect Creek plan will be compensated for by accelerating the due date for the Bobtail Creek TMDL from 2004 to 2003.

Two commentors raised the issue that the timelines for TMDL completion specified by the planning schedule may not be attainable. They point out that there is a tremendous amount of work to be done with very limited resources and express concern that the quality of the plans and the opportunities for local public to be involved will suffer. DEQ agrees that the timeline for TMDL development is challenging. DEQ lacks the authority to substantially extend this schedule which was established in response to a court order. An appeal of that order is underway, but resolution is not expected for a year or more.

The DEQ has entered into a cooperative agreement with EPA that requires annual assessment of the TMDL workload. EPA will provide assistance in developing TMDLs where appropriate and is providing funding for contract support services. The DEQ Watershed Management Section recognizes that in many cases the time and data available will preclude writing highly detailed plans addressing all potential issues, but such circumstances are almost the norm in environmental planning. In these cases plans are phased to provide for the collection and analysis of additional data and an "adaptive management" approach to plan implementation. This planning strategy makes it possible to allow for ongoing local input and to adapt to natural occurrences, such as fire, and yet maintain plan reliance on sound information and "good science".

One commentor objected to DEQ's proposal to modify the TMDL planning schedule, noting "DEQ and EPA are not following the court-approved prioritization for 2002, because some TMDL development scheduled for later years has been accelerated at the expense of streams that were prioritized for this year."

As noted in the comment, the State is proposing to modify the priority ranking of certain TMDLs originally established in a schedule filed with the court by delaying TMDLs in some areas in order to accelerate the development of TMDLs in other areas. See Table 1, included in the "TMDL Development Schedule Revisions" section of this text. One of the proposed priority changes contemplated by the State is to complete TMDLs for the Powder and Tongue River watersheds in 2002 in anticipation of discharge permits that may be needed for CBM development in that area. The State believes that the Court's order allows DEQ to use its discretion to re-prioritize TMDLs so long as the pace of TMDL development is maintained. The Court's Order of June 21, 2000 and its opinions interpreting the Order support DEQ's position.

In its Order of June 21, 2000, the court addressed the completion date of TMDL development and the prioritization of TMDL development under two separate provisions. In paragraph 2, the Court ordered EPA, in conjunction with the State, to develop a schedule for TMDL development that would result in the completion of all necessary TMDLs by 2007. *See Order of June 21, 2000 at & 2.* The Court's Order also contained a provision that affirmed the State's discretion to prioritize among the sites included in the TMDL schedule. *See Order of June 21, 2000 at & 4*. In explaining these provisions, the Court repeatedly emphasized that the State had discretion to prioritize TMDLs by stating that: "…nothing in the Court's Order detracts from the State's discretion to prioritize among WQLSs, except that all TMDLs for WQLSs identified in 1996 must be developed by May 5, 2007." *Friends of the Wild Swan v. EPA, 130 F. Supp.2d 1204, 1206 (D.Mont, 2000).* The Court also clarified that the State may modify its TMDL priorities in anticipation of issuing new discharge permits in compliance with paragraph 6 of its Order by stating that: "The State may identify and prioritize those WQLSs where projects that will require permits are contemplated and develop TMDLs for those WQLSs first." *Id., 130 F. Supp.2d 1207, 1211 (D. Mont. 2000)*. As indicated above, the State is re-prioritizing TMDLs in order to develop TMDLs for the Tongue and Powder river drainages because CBM development will likely require the issuance of discharge permits.

Comments Relating to Other Issues

Three or four commentors noted that impaired waterbodies for which the required TMDLs or water quality restoration plans have been completed have not been removed from the 303(d) List. In the past EPA guidelines called for the removal of waters from the list as soon as water quality restoration plans designed to deal with the identified impairments had been completed. New EPA guidance directs that impaired waters remain on the 303(d) List until water quality meets applicable standards. DEQ anticipates that additional guidance will result in the next 303(d) List update having an entirely separate listing category for impaired waters with completed plans in place.

Another change from previous procedure which confused two or three individuals related to the format of the material posted on the EnviroNet web site. In 2000 the "official" version of the 303(d) List was a paper document and the 2000 and 2001 305(b) Reports were electronic database and GIS map files submitted to EPA. In order to provide computer access to the 303(d) List database and to provide any publicly available access to the 305(b) materials, DEQ and NRIS posted the 305(b) database material on NRIS's EnviroNet web site. Because the impaired waters which appear on the 303(d) List are a subset of the waters included in the 305(b) database, the user could query EnviroNet to display the 303(d) listing of impaired waters. However, the text and appendices portions of the 2000 303(d) List document were not available via the EnviroNet site.

In order to begin moving to a reporting format that will be useable with forthcoming changes to EPA reporting requirements, DEQ has adopted a new approach to publishing the 2002 303(d) List. The "official" version of this 2002 List is being published in two forms. A CD containing all the text, databases, GIS data files, and appendices which make up the full 303(d) List is being submitted to the EPA. The exact same material is being published for public use on EnviroNet – in a format which allows anyone having Internet computer access to read the database information and view the associated map coverages. It should be noted, however, that the interactive database accessible via this particular EnviroNet file includes only the 303(d) List impaired waters. A separate file (to be posted on Environet about October 1, 2000) will publish the 2002 305(b) update. Like the 2000 file this version will display all waters currently included in Montana's water quality assessment system.

One commentor raised several questions regarding the status of waters removed from the 303(d) List and placed on the reassessment list in the 2000 update, noting that "DEQ appears to be adding confusion to the re-assessment process that altered the 2000 303(d) list from previous lists…." There is no question that the legal status of the waters on the reassessment list is confusing; the status of these waters is at the heart of the issues under appeal to the 9th Circuit Court of Appeals. DEQ's understanding of the court order as it stands at this point is that TMDL's must be prepared in accordance with the schedule submitted to the District Court (which allows for limited schedule modifications so long as the overall pace of plan development is maintained). These plans must address the use impairments and pollutants requiring TMDLs which were identified on the Montana 1996 303(d) List. TMDLs addressing waters, use impairments, or TMDL pollutants first listed on the 2000 or subsequent list updates must be addressed within 10 years of initial listing – in accordance with the provisions of the 1997 amendments to state water quality law. In other words, any water appearing on the 2000 (or 2002) reassessment list must be addressed in a TMDL completed in accordance with the court-ordered schedule for the impairments and pollutants appearing on the 1996 list no matter how it has been listed on subsequent lists. If the same waters appear on the 2000 or 2002 lists for new use impairments or pollutant causes DEQ has 10 years

subsequent to listing to address these newly-identified impairments and causes, or it may address them at the same time as it deals with the 1996 listings.

The reader will find that a discussion has been added to the "Montana's 303(d) Assessment Process" section of this document which lays out DEQ's reassessment work accomplished since publication of the 2000 List. An Appendix F has also been added which lists all waters remaining on the reassessment list. The 2000 303(d) List identified 96 waters on which DEQ planned to do reassessments by the end of the 2001 field season. It specifically noted that "this schedule is preliminary and subject to change by a number of factors." As of the end of the 2002 field season, DEQ has completed new assessments on 86 waters from the 2000 reassessment list, 54 waters from the 2000 impaired list for which vital information was lacking, and 7 waters which have not previously appeared on any list. New assessments are in progress for an additional 20 to 30 waters, for which data were collected this field season. In spite of the fact that 1) drought conditions have precluded collecting representative data on a number of waters and that 2) the data needs associated with meeting the court-ordered TMDL planning schedule have taken precedence over other assessment goals, assessments have been done, or data have been collected, on approximately 70 of the 96 reassessment list waters scheduled for review.

One organization took DEQ to task for failing to seek out and utilize all relevant sources of data in compiling its assessments. However, the only specific source of data identified in this comment is a private database apparently maintained by that organization. This organization was one of those to which DEQ mailed its September 2001 letter requesting them to identify any water quality information they might have or know of which could be used to update the 303(d) assessments. This organization did not respond to that request. DEQ can't use private data which are withheld when the department requests information from the holders of that data.

One comment stated: *"DEQ continues to consider MPDES permits as TMDLs. An MPDES permit does not account for all pollutants, point and non-point source throughout the entire water body. A permit is not a substitute for a TMDL though it may be part of the TMDL process."* This comment apparently refers to the draft Appendix C which presents a table identified as a "Summary of TMDL Approvals in Montana" and to a portion of the table which lists MPDES permits as "Approved Point Source TMDLs."

The same argument made in this comment was rejected by the court in Friends of the Wild Swan v. EPA, 130 F. Supp. 2d 1184 (D. Mont. 1999). In that case, the Plaintiffs argued that the 129 point source TMDLs developed between 1986 and 1996, which were included in MPDES permits, were not valid TMDLs. The Court did not agree. Instead, the Court found that the 129 TMDLs complied with EPA's regulations because they included both a wasteload allocation for point sources and a load allocation for nonpoint sources and accounted for seasonal variation. Consequently, the State and EPA continue to consider the load allocations developed in point source discharge permits to be valid TMDLs under the Clean Water Act.

DEQ is not responding in this document to comments which it see as being substantively identical to comments (by essentially the same parties) submitted on the **Draft 2000 303(d) List**. The Department stands by the responses which it made to the original comments. It also notes that before the EPA approved Montana's Final 2000 303(d) List it extensively reviewed both the comments submitted on the Draft 2000 List and DEQ's response to those comments. EPA also provided a 30-day comment period to allow anyone not satisfied with Montana's final 2000 list or DEQ's handling of comments to comment directly to EPA. On January 29, 2001 the EPA Regional Administrator gave full approval to the entire Montana Final 2000 303(d) List.

Glossary of Terms

303(d) List – A compilation of impaired and threatened waterbodies in need of water quality restoration which is prepared by DEQ and submitted to EPA for approval. This list is commonly referred to as the "303(d) List" because it is prepared in accordance with the requirements of section 303(d) of the federal Clean Water Act of 1972. The term is often used in a narrow sense to refer only to the specific list of impaired and threatened waters which appears in this report. In a broader sense it includes all the information submitted to EPA.

305(b) Report – A general overview report of state water quality conditions which DEQ prepares and submits to EPA in accordance with the requirements of section 305(b) of the federal Clean Water Act of 1972.

Anthropogenic impacts – Human caused changes leading to reductions in water quality.

Assessment – A complete review of waterbody conditions using chemical, physical, or biological monitoring data alone or in combination with narrative information, that supports a finding as to whether a waterbody is achieving compliance with applicable water quality standards.

Basins – For water quality planning purposes, Montana is divided into four hydrologic basins or regions: the **Columbia Basin** (west slope waters draining to the Columbia River), the **Upper Missouri Basin** (all Missouri River drainages above the Marias River confluence), the **Lower Missouri Basin** (Missouri River drainages including and downstream of the Marias River, and a segment of the Saskatchewan drainage in Glacier National Park), and the **Yellowstone Basin** (waters draining into the Yellowstone and the Little Missouri rivers).

Beneficial uses – The uses that a waterbody is capable of supporting when all applicable water quality standards are met. What standards apply to a particular waterbody depend on its classification under the Montana Water-Use Classification System.

Beneficial use determination - A finding, based on sufficient credible data, that a state water is – or is not – achieving compliance with the water quality standards for its applicable beneficial uses.

Best Management Practices (BMPs) – Those activities, prohibitions, maintenance procedures, or other management practices used to protect and improve water quality. BMPs may or may not be sufficient to achieve water quality standards and protect beneficial uses.

Biological data – Chlorophyll *a* data, aquatic biology community information (including fish, macroinvertebrates, and algae), and wildlife community characteristics.

Chemistry and toxicity data – Includes bioassay, temperature and total suspended sediment data and information relating to such factors as toxicants, nutrients, and dissolved oxygen.

Communities – Organisms of a biologically related group (i.e. fish, wildlife, macroinvertebrates or algae).

Data categories – Chemistry/physical, habitat, and biological data packages used for assessing the availability of sufficient credible data for making aquatic life beneficial use-support determinations.

Data quality objectives – Quality control elements of a water quality monitoring plan, intended to ensure that the data obtained will be sufficient to fulfill the purpose for which it is being collected.

Degradation – A change in water quality that lowers the quality of high-quality waters for a parameter. The term does not include those changes in water quality determined to be nonsignificant pursuant to 75-5-301(5)(c). [75-5-103(5) MCA]

Full support – A beneficial use determination, based on sufficient credible data, that a waterbody is achieving all the water quality standards for the use in question.

Habitat data – See physical and habitat data.

Hydrogeomorphology – The science relating to the geographical, geological, and hydrological aspects of waterbodies, and to changes to these aspects in response to flow variations and to natural and human-caused events, such a heavy rainfall or channel straightening.

Hydrologic units (HUCs) – Watersheds delineated by the US Geologic Survey as fourth order drainages and assigned Hydrologic Unit Codes based on a standardized system. In Montana, there are several HUCs in each sub-major basin and two or more sub-major basins in each water basin.

Impaired waterbody – A waterbody or stream segment for which sufficient credible data shows that the waterbody or stream segment is failing to achieve compliance with applicable water quality standards (nonsupport or partial support of beneficial uses). [75-5-103(11) MCA]

Independent evidence – An approach used to make aquatic life use-support determinations when a limited array of chemistry/physical, habitat or biological data provide clear evidence that is sufficient to make a beneficial use-support determination.

Macroinvertebrates – Animals without backbones that are visible to the human eye (insects, worms, clams, and snails).

Montana Water-Use Classification System – Montana State regulations [ARM 17.30.606 - 614] assigning state surface waters to one of nine use classes. The class to which a waterbody is assigned defines the beneficial uses that it should support.

Naturally occurring – Water conditions or material present from runoff or percolation over which humans have no control or from developed land where all reasonable land, soil, and water conservation practices have been applied. [75-5-306(2) MCA]

Nonpoint source – Source of pollution which originates from diffuse runoff, seepage, drainage, or infiltration. [ARM 17.30.602(18)] Nonpoint source pollution is generally managed through best management practices or a water quality restoration plan.

Nonsupport – A beneficial use determination, based on sufficient credible data, that a waterbody is not achieving all the water quality standards for the use in question, and the degree of water quality impairment is relatively severe.

Overwhelming evidence – Information or data from only one data category which, by itself, constitutes sufficient credible data for making an aquatic life use-support determination.

Parameter – A physical, biological, or chemical property of state water when a value of that property affects the quality of the state water. [75-5-103(22) MCA]

Partial support – A beneficial use determination, based on sufficient credible data, that a waterbody is not achieving all the water quality standards for the use in question, but the degree of impairment is not severe.

Pathogens – Bacteria or other disease causing agents that may be contained in water.

Physical and habitat data – Narrative and photo documentation of habitat conditions, habitat surveys and function rankings, direct measurements of riparian or aquatic vegetation communities, and other measures of hydrogeomorphic characteristics and function.

Point source – A discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, or vessel or other floating craft, from which pollutants are or may be discharged. [75-5-103(24) MCA]

Pollution – Defined by Montana law [75-5-103(25) MCA] as:

1. Contamination or other alteration of the physical, chemical, or biological properties of state waters that exceed that permitted by Montana water quality standards, including but not limited to standards relating to changes in temperature, taste, color, turbidity or odor; or,
2. the discharge, seepage, drainage, infiltration, or flow of liquid, gaseous, solid, radioactive, or other substance into state water that will or is likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, or welfare, to livestock, or to wild animals, bird, fish or other wildlife, or
3. discharge, seepage, drainage, infiltration, or flow that is authorized under the pollution discharge permit rules of the board is not pollution under this chapter. Activities conducted under the conditions imposed by the department in short-term authorizations pursuant to 75-5-308 MCA are not considered pollution under this chapter.

Prioritization – A ranking of impaired waterbodies conducted by DEQ in consultation with the statewide advisory group using established criteria to rank waterbodies as high, moderate, or low priority for preparing water quality restoration plans (specifically TMDL plans).

Reasonable land, soil, and water conservation practices – Methods, measures, or practices that protect present and reasonably anticipated beneficial uses. These practices include but are not limited to structural and nonstructural controls and operation and maintenance procedures. Appropriate practices may be applied before, during, or after pollution producing activities. [ARM 17.30.602(21)]

Reference Condition – The condition of a waterbody capable of supporting its present and future beneficial uses when all reasonable land, soil, and water conservation practices have been

applied. Reference conditions include natural variations in biological communities, water chemistry, soils, hydrology, and other natural physiochemical variations.

Region – See Basin.

Riparian area – Plant communities contiguous to and affected by surface and subsurface hydrologic features of natural waterbodies. Riparian areas are usually transitional between streams and upland.

Segment – A defined portion of a waterbody.

State waters – A body of water, irrigation system, or drainage system, either surface or underground (excludes water treatment lagoons or irrigation waters which do not return to state waters).

Sub-major basin – The aggregation of several watersheds or HUCs into a larger drainage system. The US Geological Survey has defined 16 sub-major basins in Montana with at least two in each of the Montana basins.

Sufficient credible data – Chemical, physical, or biological monitoring data, alone or in combination with narrative information, that supports a finding as to whether a waterbody is achieving compliance with applicable water quality standards. [75-5-103(30) MCA]

Suspended solids – Materials such as silt that may be contained in water and do not dissolve.

Threatened waterbody – A waterbody for which sufficient credible data and calculated increases in loads show that the water body or stream segment is fully supporting its designated uses but threatened for a particular designated use because of:

(a) proposed sources that are not subject to pollution prevention or control actions required by a discharge permit, the nondegradation provisions, or reasonable land, soil, and water conservation practices; or

(b) documented adverse pollution trends. [75-5-103(31) MCA]

Total Maximum Daily Load (TMDL) – The sum of the individual waste load allocations for point sources and load allocations for both nonpoint sources and natural background sources established at a level necessary to achieve compliance with applicable water quality standards. [75-5-103(32) MCA] In practice, TMDLs are water quality restoration targets for both point and nonpoint sources that are contained in a water quality restoration plan or in a permit.

Toxicant – A toxic agent.

Waterbody – A lake, reservoir, river, stream, creek, pond, marsh, wetland or other body of water above the ground surface.

Water quality limited segment (WQLS) – A body of water which is not fully supporting its beneficial uses (an impaired waterbody). If there is no water quality restoration plan with an approved TMDL for a waterbody, it is listed on the 303 (d) List of impaired waters.

Water quality restoration plan - A plan to improve water quality to achieve state water quality standards. Such a plan may also be referred to as a "TMDL plan" if it addresses the eight criteria used by the EPA to approve TMDL plans.

Water quality standards – the standards adopted in ARM 17.30.601 *et seq.* and WQB-7 to conserve water by protecting, maintaining, and improving suitability and usability of water for public water supplies, wildlife, fish and aquatic life, agriculture, industry, contact recreation, and other beneficial uses.

Weight of evidence – An approach used to make aquatic life use-support determinations when there are high levels of information from all three data categories (chemistry/physical, habitat and biological), including two biological communities.

Acronyms, & Abbreviations

ARM	Administrative Rules of Montana
BMP	Best Management Practice
BUD	Beneficial Use Determination
DEQ	Montana Department of Environmental Quality
DFWP	Montana Department of Fish, Wildlife and Parks
DQO	Data quality objectives
EPA	U.S. Environmental Protection Agency.
EQC	Montana Environmental Quality Council
HUC	Hydrologic Unit
MCA	Montana Code Annotated
MPDES	Montana Pollutant Discharge Elimination System
NPS	Nonpoint source pollution
PS	Point source pollution
SCD	Sufficient Credible Data
TMDL	Total Maximum Daily Load
WQB-7	Circular WQB-7, Montana Water Quality Standards