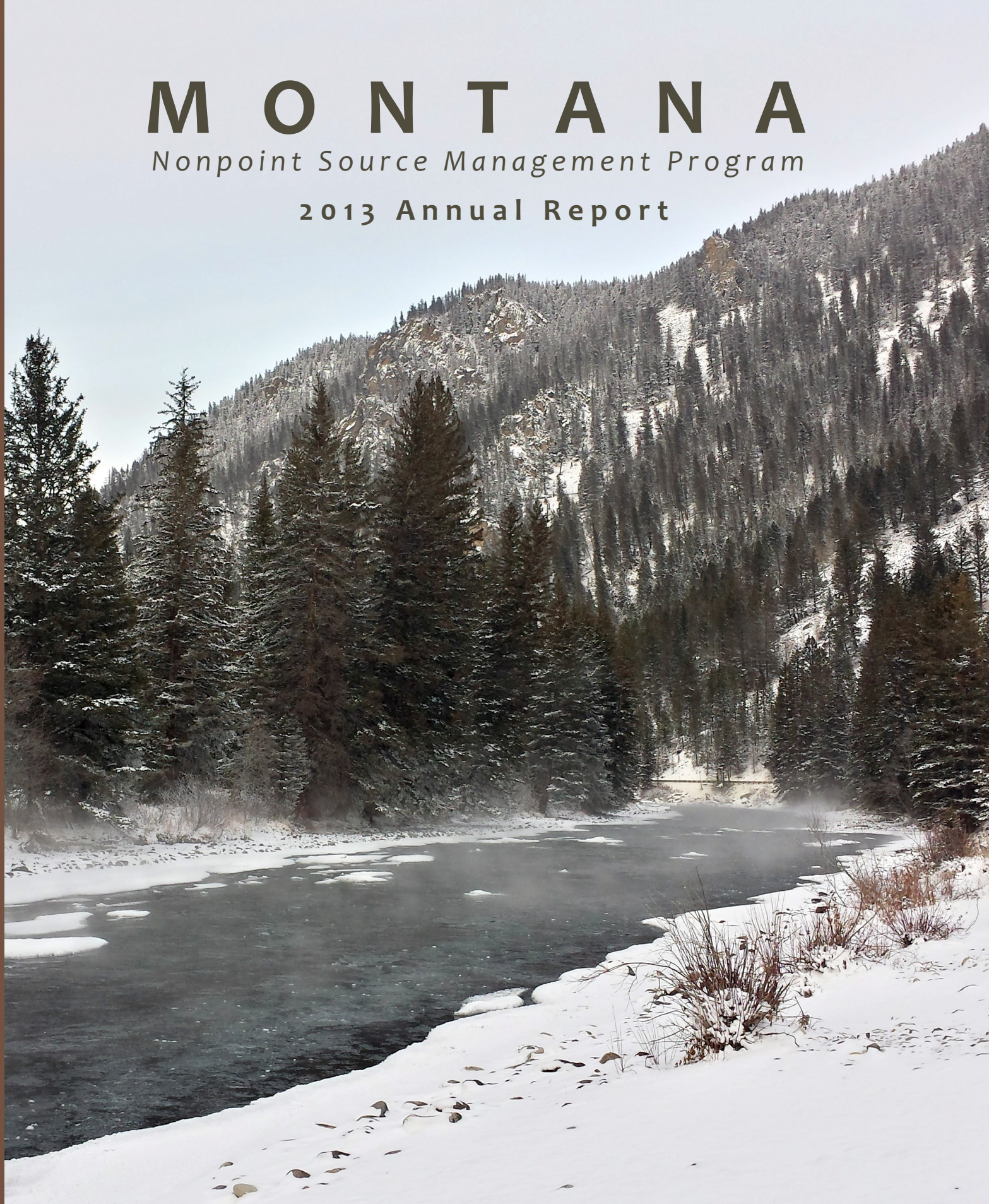
MONTANA

Nonpoint Source Management Program

2013 Annual Report



Montana's Vision Statement for Water Quality

Water quality will be restored and protected through the implementation of voluntary best management practices identified in science-based, community supported watershed plans.

Montana Department of Environmental Quality

MONTANA Watershed Protection

Prepared By

Water Quality Planning Bureau
- Watershed Protection Section

Contributors

Water Quality Planning Bureau
- Water Quality Standards Section
- Water Quality Monitoring and Assessment Section
- Watershed Management Section
- Watershed Protection Section
- Information Management and Technical Services Section
- Quality Assurance and Quality Control Section

The Montana Association of Conservation Districts
The Montana Watershed Coordination Council
The Montana Wetland Council
Montana Watercourse

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This report was prepared by Laura Rennick Andersen, Water Quality Specialist with the Watershed Protection Section of the Water Quality Planning Bureau (WQPB), Montana Department of Environmental Quality (DEQ). Considerable advice and review was provided by Robert Ray, Section Supervisor for WQPB's Watershed Protection Section at DEQ. Input was also provided by Peter Ismert, with the Environmental Protection Agency (EPA), Region 8. Individual updates were provided by collaborating partners, WQPB supervisors, and staff.

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Montana Department of Environmental Quality
Water Quality Planning Bureau
1520 E. Sixth Avenue
P.O. Box 200901
Helena, MT 59620-0901

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Nonpoint Source Management Program 2013 Annual Report

The purpose of the Montana Nonpoint Source (NPS) Management Program Annual Report is to inform the public about annual progress in fulfilling the goals of the NPS Management Plan. This report also partially satisfies the requirements of Section 319 of the federal Clean Water Act , which requires states to: 1) assess waterbodies for NPS pollution effects, 2) develop programs to manage those effects, 3) implement those programs, and 4) report on NPS program implementation to the public and to the U.S. Environmental Protection Agency (EPA).

Highlights from the 2013 Nonpoint Source Management Program

Goal: Provide support and promote watershed groups

Multiple programs within the Water Quality Planning Bureau supported the 2013 Watershed Symposium through assistance with the planning effort and providing training materials at the symposium. The 2013 Watershed Symposium provided a statewide benefit essential for watershed professionals who have limited funding and time to attend trainings.

Goal: Send nutrient standards package to the Board of Environmental Review

Collaborating with the advisory Nutrient Work Group, the Water Quality Standards Section drafted rules for nutrient standards and their implementation.

Goal: Revise Section 319 Reporting Guidance for contractors in Montana

In May, the Watershed Protection Section revised the Status Report Guidance and Annual Report Guidance for Section 319 contracts. These revisions include user feedback to ensure reports are as functional as possible.

Goal: Continue to develop and implement watershed-based TMDLs

The EPA approved 176 TMDLs, completed in eight project areas in Montana. The Watershed Protection Section managed more than fifty active Section 319 contracts that implemented the state's NPS Management Plan and approved TMDLs.

Implementing the Montana NPS Management Plan

by the Water Quality Planning Bureau and Partners

The watershed planning approach is a coordination tool for all stakeholders interested in conserving water resources in Montana. By collaborating in the watershed approach, DEQ, watershed groups, conservation districts, agencies, tribes, academia, and non-governmental organizations can broadly distribute information, thereby increasing public understanding and participation in water quality protection and nonpoint source issues.

DEQ's Water Quality Planning Bureau (WQPB) manages the Montana NPS Management Program. WQPB's mission is to assure that water quality is maintained and improved so that state waters can support all their beneficial uses. This is accomplished through an integrated approach based on water quality standards development, monitoring and assessment, and development and implementation of water quality improvement plans and TMDLs (Appendix A).

This document highlights important and notable actions taken to achieve the NPS Plan's five-year goals in three categories: Resource, Policy, and Education and Outreach (Appendix B). The highlighted activities include projects in 2013 by WQPB, interagency councils, watershed groups, and other agencies and organizations to promote collaboration, foster water resource awareness, and protect and improve water quality in Montana.

Montana Department of Environmental Quality
Water Quality Planning Bureau

Water Quality Standards

The Water Quality Standards Section (WQS) develops criteria to identify the level of water quality necessary to protect the beneficial uses of stream, river, lake, or groundwater resources. The NPS Program seeks to protect and restore these beneficial uses, including drinking water, recreation, and fish and aquatic life. Unlike the other WQPB sections, WQS does not receive Section 319 funding; however, WQS's work is fundamental to the NPS Management Program in Montana.

WQS is working to complete several projects on numeric nutrient standards. First, data collection in the upper Yellowstone River (Livingston to the confluence of the Big Horn River) has been completed and will be used to derive numeric nutrient criteria with a report anticipated in early 2015. Second, a final report for the three-year nutrient-addition field study carried out in Carter County should be available in 2014. Third, the Lower Yellowstone River final report, which provides the scientific basis for the proposed nutrient criteria, has been released and is available on DEQ's website at http://deq.mt.gov/wqinfo/standards/NumericNutrientCriteria.mcpx.

Data collection for deriving numeric nutrient standards for the Missouri River from Toston dam to Canyon Ferry Lake was completed in 2013. A report on the effort will be available at the end of 2014. Two technical projects are planned for this year: (1) a multi-year project to study a nutrient-related water quality parameter (dissolved oxygen) in prairie streams began in 2013; (2) data collection in the Missouri River (Craig to Loma) to derive nutrient criteria using a computer model is expected to begin in 2014.

WQS continued working with affected parties on implementation processes for nutrient criteria. Collaborating with the advisory Nutrient Work Group, WQS drafted rules for nutrient standards and their implementation. The rules are still being reviewed and modified. DEQ hopes to present the Board of Environmental Review (BER) with a nutrient standards package in 2014.

WQS collected diatom data in the Middle Rockies Ecoregion to identify nutrient-increaser taxa. These diatoms are found in greater concentrations in streams with higher nutrient levels. This type of diatom data will help DEQ identify when these streams are affected by increased nutrient levels. The final report will be available in 2014.

WQS began re-evaluating 184 DEQ-identified reference sites across the state to further refine and verify the accuracy of these sites. This project will take several years.

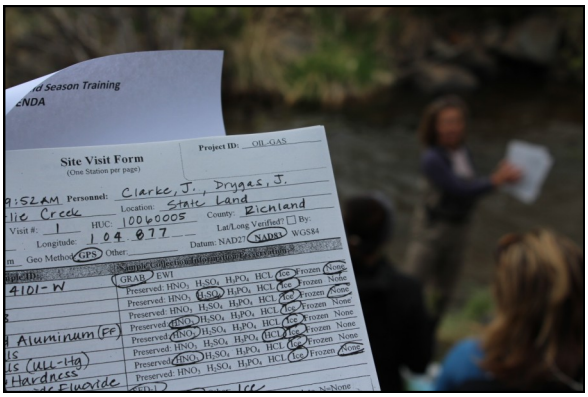
WQS began extensively reviewing data and initiated public outreach for "I" classified streams. WQS anticipates completing the review in 2014 and recommending to BER appropriate classifications with the intent of no longer having I-class waterbodies in Montana.

Water Quality Monitoring and Assessment

The Water Quality Monitoring and Assessment Section (WQMAS) monitors water quality conditions and trends statewide and assesses sources and severity of pollution problems by operating statewide water quality monitoring networks, inventorying pollution sources, and identifying impaired waterbodies.

WQMAS provided monitoring and assessment support to many TMDL projects, which must be completed by 2014 as part of a consent decree. This endeavor includes more than 200 waterbodies and at least 800 pollutant–waterbody combinations in the following areas:

- Lower Blackfoot (nutrients and metals)
- Bitterroot (nutrients and metals)
- Central Clark Fork tributaries (nutrients)
- Clark Fork-Silver Bow (metals)
- Flathead (nutrients)
- Thompson (nutrients and metals)
- Kootenai-Fisher (nutrients and metals)
- Upper Clark Fork (metals)
- Hyalite Creek
- Flint (nutrients)
- Yaak watershed
- Blackfoot watershed
- Tobacco watershed
- Central Clark Fork area
- Thompson watershed
- Kootenai-Fisher watersheds
- Jefferson watershed
- Clark Fork mainstem (metals)



The 2014 Integrated Report on statewide water quality was under development in 2013. During 2013, WQMAS continued monitoring water quality in the Madison. The findings will provide impairment information for the TMDL program to develop TMDLs after 2014. WQMAS monitored for metals, nutrients, sediment, temperature, and bacteria. WQMAS also partnered with a local volunteer monitoring program, the Madison Stream Team, to support a local initiative, save state resources, and promote NPS education and outreach in the watershed. This monitoring occurs on currently impaired streams and uses a risk-based approach to assess previously un-assessed waterbodies in the Madison watershed.

WQMAS provided training to volunteers in the Madison on various monitoring techniques, which included how to use field equipment. WQMAS also provided input on monitoring design, methods, field manual preparation, and field training for WQPB and other DEQ staff as well as for general stakeholders.

WQMAS continued a statewide fixed-station monitoring program, which included 23 monitoring sites on medium and large rivers in eastern Montana.

Because new oil and gas production technologies are emerging in eastern Montana and are not covered under the Clean Water Act, WQMAS applied for and received a grant under the Montana DNRC Reclamation and Development Grants Program to investigate baseline groundwater conditions in areas where hydraulic fracturing for oil and gas is taking place. WQMAS is also targeting surface waters in small watersheds where oil and gas reserves are being developed. In areas of nonconventional oil and gas extraction, initial planning for groundwater monitoring has occurred and the project will begin in earnest in 2014.

Watershed Management

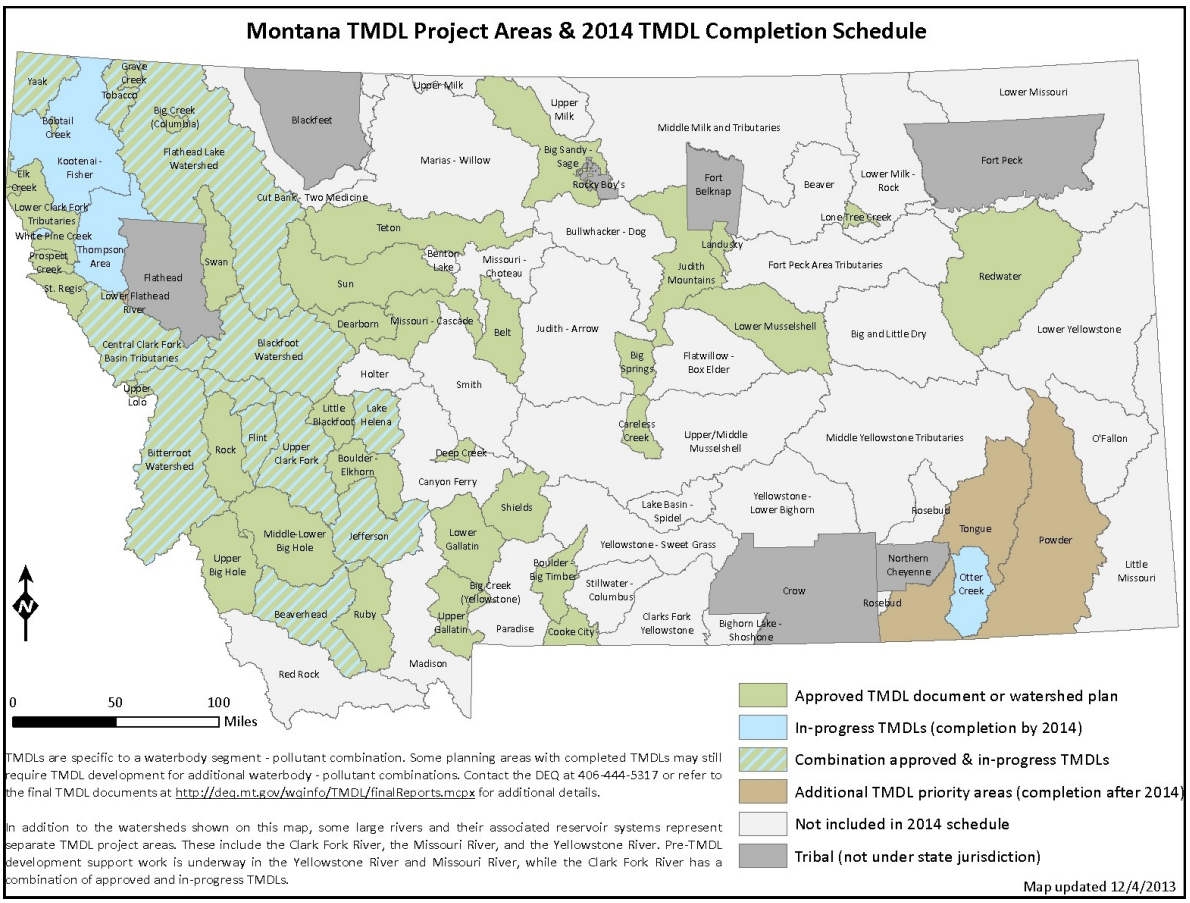
The Watershed Management Section (WMS) develops Total Maximum Daily Loads (TMDLs) for impaired waters on Montana's 303(d) list. A TMDL refers to the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. A TMDL is sometimes expressed as a reduction in pollutant loading necessary to achieve water quality standards. TMDL documents in Montana typically include the framework for a restoration strategy, including implementation and monitoring recommendations. TMDLs are essential for planning watershed restoration activities to ensure the most cost-effective best management practices are developed to improve water quality. TMDLs are developed at a watershed scale to encompass the entire area that contributes a pollutant to a stream. TMDL project areas were created throughout the state to group multiple waterbodies with similar impairment causes.

In 2013, EPA approved 176 TMDLs completed in eight project areas in Montana. These TMDLs were located in the Bonita-Superior, Boulder-Elkhorn, Flint, Judith Mountains, Lake Helena, Lower Blackfoot, Lower Gallatin, and Rock project areas. The table shows a breakout of the approved TMDLs and is arranged by project area and pollutant group.

Project Area	Sediment	Nutrient	Pathogen	Metals	Temperature	Total
Bonita-Superior	-	-	-	14	-	**14**
Boulder-Elkhorn	15	7	-	-	3	**25**
Flint	-	11	-	-	-	**11**
Judith Mountains	1	2	-	31	-	**34**
Lake Helena	-	-	-	7	-	**7**
Lower Blackfoot	-	10	-	-	-	**10**
Lower Gallatin	12	24	5	-	-	**41**
Rock	11	11	-	11	1	**34**
Total TMDLs	**39**	**65**	**5**	**63**	**4**	**176**

Current watersheds for which TMDLs are being developed include the Bitterroot, Beaverhead-Jefferson, Central Clark Fork tributaries, Clark Fork River-Silver Bow Creek, Flathead Lake watershed, Jefferson, Kootenai-Fisher, Otter Creek, Thompson, Tobacco, Upper Clark Fork, White Pine Creek, and Yaak. A map of Montana TMDL project areas and the status of development in those areas can be found on the right.

In 2013, WMS collected source assessment data for TMDL development in the Madison project area, with plans to continue throughout the 2014 field season.



Watershed Protection

The Watershed Protection Section (WPS) works to protect and restore water quality from the effects of nonpoint source (NPS) pollution. NPS pollution is the state's single largest source of water quality impairment. Unlike pollution from industrial and sewage treatment plants (point sources), NPS pollution comes from many widespread sources and can be generated by most land-use activities. NPS pollution is created when runoff water moves over and through the ground, delivering pollutants to lakes, rivers, wetlands, and groundwater. Common NPS pollutants include sediments, nutrients, heavy metals, pesticides, pathogens, oils, and salts.

Water Quality Restoration

WPS receives federal Clean Water Act (CWA) Section 319 funding to address NPS water quality problems in Montana. Each year EPA awards a 319 grant to WPS to fund water quality restoration projects. WPS solicits project proposals from local watershed groups, conservation districts, and other organizations to address NPS pollution problems. Projects are selected by WPS with the support and guidance of the Water Activities Work Group of the Montana Watershed Coordination Council and the Agency Review Panel.

In October 2013, WPS completed and closed out the fiscal year 2008 Section 319 projects grant from EPA. This grant ($1,236,000) allowed DEQ to support 30 NPS projects with local sponsors throughout Montana between 2008 and 2013. In 2013, WPS also closed out the state fiscal year 2012 Section 319 Program grant (federal = $1,106,424; state match = $737,617).

In 2013, DEQ awarded $773,600 in Section 319 NPS funding to local projects, funding eight watershed restoration and six education and outreach projects (Appendix C). Non-federal in-kind match for these projects totaled $849,024. WPS continued to use electronic application forms for the fiscal year 2013 Section 319 project proposals. These forms have greatly reduced the amount of time necessary to complete the application process for both applicants and reviewers.

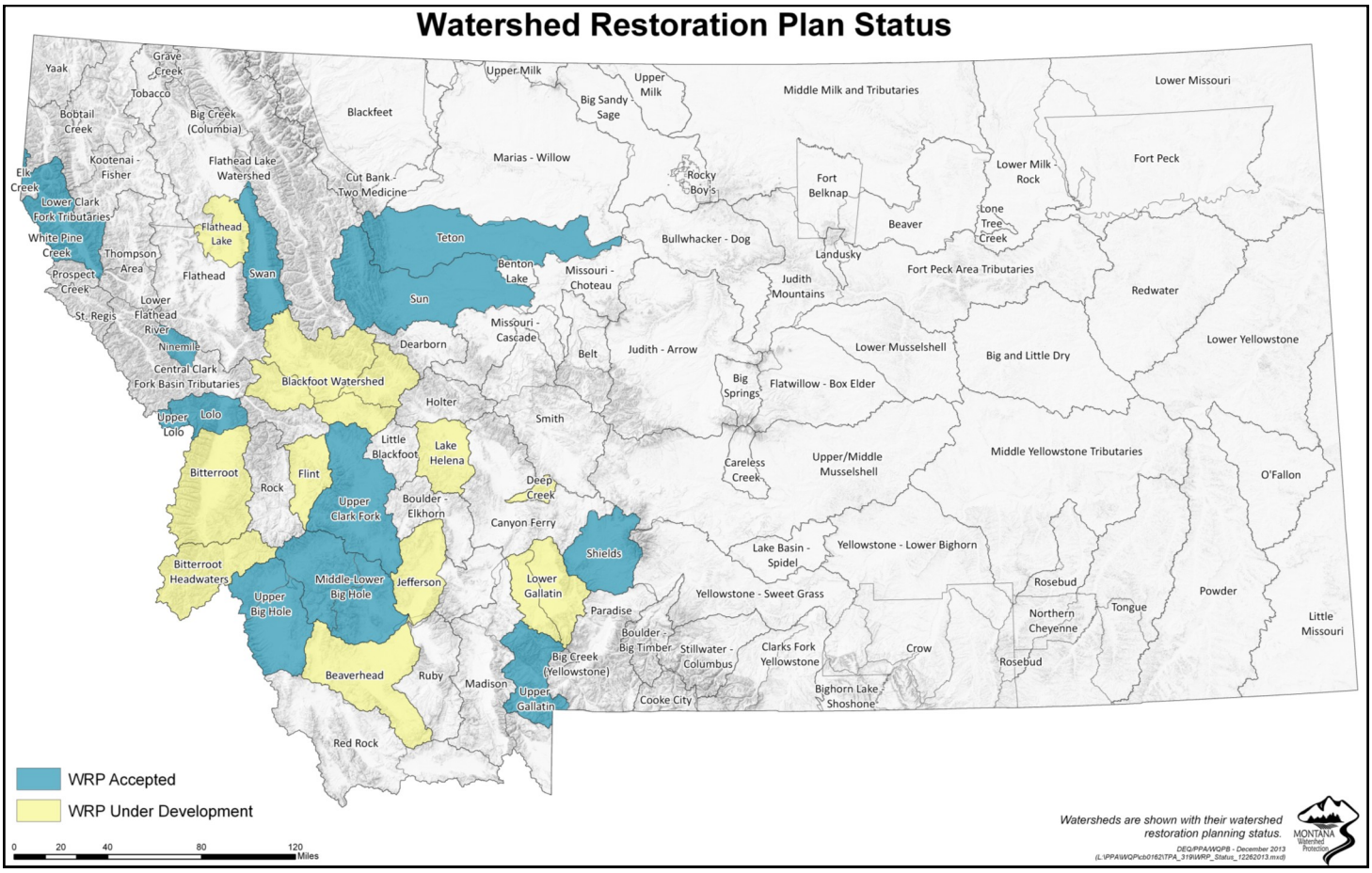
During 2013, WPS managed more than fifty open contracts that implemented the state's NPS Management Plan. WPS closed sixteen Section 319 contracts in 2013 and expects to close nine more by mid-February 2014 (i.e., contracts that expired in December 2013 with final reports due within 45 days). See Appendix D for a complete list of contracts closed in 2013.

Beginning in July 2010, DEQ contracted the Soil and Water Conservation Districts of Montana, Inc. (SWCDMI) to manage the Section 319 Mini-Grants Program. Through this program, up to $2,000 per project is available to support local groups engaged in water quality and NPS pollution education efforts. SWCDMI works with the Montana Watershed Coordination Council's Education and Outreach Committee to review applications. SWCDMI awarded six mini-grants in March and another five mini-grants in October, for a total of $19,814 awarded in 2013. For a complete list of mini-grants awarded in 2013 see Appendix E.

Watershed Planning

WPS continued working with watershed groups to develop Watershed Restoration Plans (WRPs). The NPS program has funded more than twenty groups to develop WRPs. In 2013, WQPB accepted WRPs for Lolo Creek, Ninemile, and Middle-Lower Big Hole watersheds and provided comment on multiple draft WRPs. Appendix G includes a complete list of WRPs under development. WPS provided training on developing WRPs, including a webinar and a workshop at the 2013 Watershed Symposium. WRPs are an important planning document for groups doing on-the-ground watershed restoration and must contain nine elements specified by EPA:

1. An identification of the causes and sources of water quality impairment.
2. An estimate of the load reductions and management measures necessary to meet standards.
3. A description of the NPS management measures that will need to be implemented.
4. An estimate of the amounts of technical and financial assistance needed.
5. An information/education component.
6. A schedule for implementing the NPS management measures.
7. A description of interim measurable milestones.
8. A set of criteria for determining whether loading reductions are being achieved over time.
9. A monitoring component to evaluate the effectiveness of implementation efforts over time.



Supporting Our Partners

WPS provided technical support to Montana Department of Natural Resources and Conservation (DNRC) efforts to update the State Water Plan. Traditionally, the State Water Plan has focused on water quantity and efforts to meet current and future demand. However, during scoping meetings held across the state, citizens and other stakeholders repeatedly brought up the connection between quantity and quality. DEQ representatives attended most of the meetings, providing information on how changes in water quantity (e.g., streamflow) influence water quality and overall watershed health.

WPS also participated as an observer on grant application review teams for DNRC and the Montana Department of Fish, Wildlife & Parks (FWP). In each instance, DEQ provided guidance on the potential effects of proposed best management practices on NPS pollution. DEQ also worked with the USDA Natural Resources Conservation Service (NRCS) to select a watershed for National Water Quality Initiative funding.

In 2013, WPS worked with the U.S. Forest Service's (USFS) Northern Region office to plan and hold the annual DEQ–Forest Service coordination meeting in Missoula. Topics at the April meeting included regional and forest-specific activities, USFS travel management planning, TMDL planning efforts, assessment procedures, monitoring activities, using TMDL Implementation Evaluation documents, and opportunities for integrating processes among agencies for prioritizing watershed protection.

On September 23, 2013, DEQ signed a new memorandum of understanding (MOU) with the USFS Northern Region. The MOU documents the cooperation between DEQ and USFS to implement the Montana Nonpoint Source Management Plan on Forest Service lands in Montana. The 2013 MOU updated the 2008 MOU between the agencies and was based on an initial MOU developed in 1987 between USFS and the then Montana Department of Health and Environmental Sciences. New provisions incorporated into the 2013 MOU include:

- A provision for DEQ to participate in the USFS's new national best management practices (BMP) monitoring program.
- A provision for USFS to provide DEQ with an annual accomplishment report for activities on Forest Service lands in Montana.

- A provision for the two agencies to coordinate, when feasible, on identifying, developing, and prioritizing water quality improvement and restoration activities with the intent to leverage financial, technical, and monitoring resources in watersheds where high priority needs overlap.
- A provision to coordinate the processes and activities under the National Environmental Policy Act (NEPA) and the Montana Environmental Policy Act (MEPA) for projects in watersheds that include federal and state lands or funds.

In 2013, the Bureau of Land Management (BLM) released three draft Resource Management Plans for public comment. Combined, the plans provided direction for managing 5.8 million acres of public land and 18 million acres of federal minerals. DEQ provided detailed comments on each draft plan in support of practices and procedures capable of preventing NPS pollution.

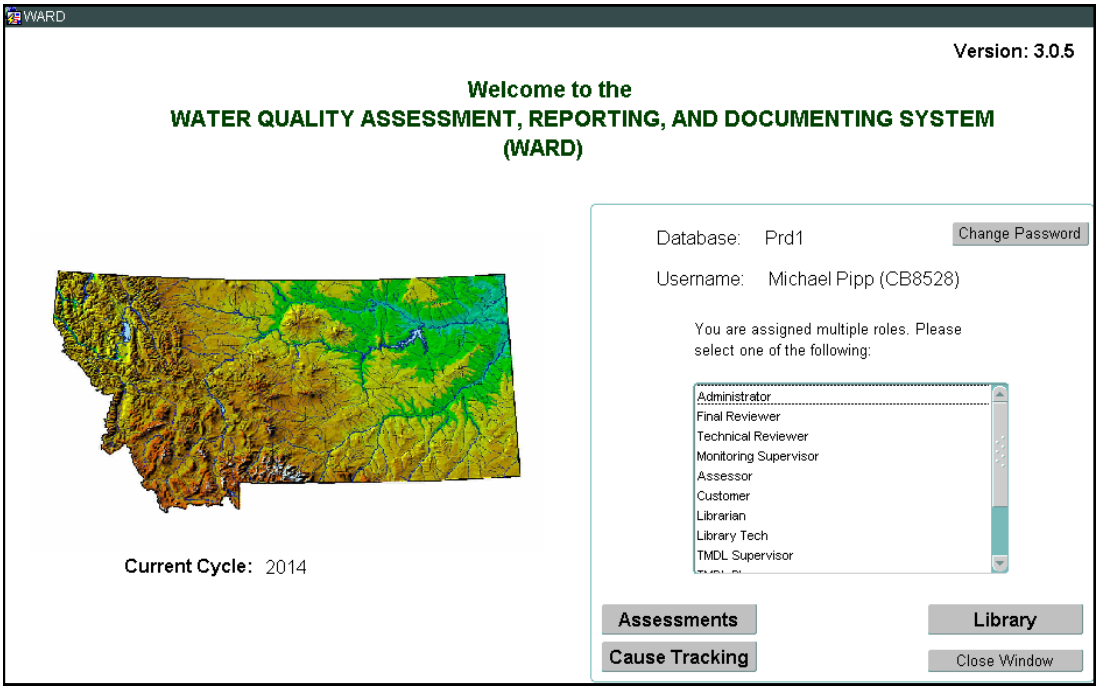
In 2013, WPS provided significant support to the Montana Watershed Coordination Council (MWCC). The MWCC's mission is to unite and support Montana's watershed communities to promote healthy and productive landscapes. In 2013, MWCC obtained its IRS 501(c)3 designation and budgeted for an executive director to be hired in 2014. WPS participated in steering committee meetings, chaired committees and work groups, and planned and participated in the MWCC Symposium; more details are provided on page 17.

Information Management and Technical Services

The Information Management and Technical Services (IMTS) Section develops and manages science and business-related information systems and provides technical support for the Water Quality Planning Bureau, including the Nonpoint Source Program. IMTS also provides project management, coordinates agency-bureau IT needs, mentors other state environmental agencies in managing data, and supports water quality/watershed modeling to develop TMDLs and water quality standards. IMTS is divided into the Data Management Group and the Modeling Group.

IMTS Data Management manages and administers nine relational databases and information management applications. These databases support the Clean Water Act (CWA) section 305(b) assessments and 303(d) listing decisions, water quality metric data, contracts, bibliographic references, and an inventory of monitoring equipment. IMTS publishes the state's biennial water quality Integrated Report (IR) online, solicits public comments on draft reports and documents, and enables water quality library queries; it also provides administrative support for WQPB's wiki sites maintained for the Section 319, Monitoring and Assessment, TMDL, and Water Quality Standards programs.

During 2013, IMTS Data Management developed and implemented upgrades and enhancements to two of its major applications: the Clean Water Act Information Center (CWAIC) and Water Quality Assessment, Reporting, and Documentation (WARD). The CWAIC application provides public access to the state's IR, among other things, and provides enhanced Web-based data searching and mapping. The new version (v3) allows database access via data queries or directly through a map-



ping interface (http://cwaic.mt.gov). The new data warehouse architecture enhances query efficiency and streamlines system management, reducing operating and maintenance costs for the program.

The **W**ater Quality **A**ssessment, **R**eporting, and **D**ocumentation system (WARD) Phase 3, Part A project has been funded by a National Environmental Information Exchange Network grant. The project fully integrated EPA's Assessment Database (ADB) data elements that are required for federal reporting within the state's WARD system, thus eliminating data redundancies and achieving a state-maintained system for documenting and reporting state assessment data and information. The program will be submitting the 2014 Integrated Report via the Exchange Network using EPA's ATTAINS work flows. This project also created the assessment data warehouse for the new CWAIC v3 application.

IMTS Data Management also processed 167 water quality data packets (as of November 26, 2013) from 46 unique monitoring projects into its water quality database – Montana EQuIS (Environmental Quality Information System) for WQX (MT-eWQX). Project transactions by WQX organizations included 34 for MTDEQ-WQ-WQX, 9 for MTWTRSHD_WQX, and 1 each for OCC, R8MONTWQ, MTVOLMON_WQX, and TSWQC_WQX. Of the 167 data packet transactions, 159 were new data inserts and 8 were data updates (revisions or corrections). These data loads were transmitted to the national Water Quality Exchange database via the Exchange Network.

Other 2013 activities of the Data Management Group included: (a) providing a training course in an environmental data management best practices to Montana Wetland & Riparian Ecosystem Training at Montana State University; (b) presenting how to manage and access water quality event data on the National Hydrography Dataset (NHD) at the Montana Watershed Coordination Council's Watershed Symposium; (c) providing technical support, guidance, and mentoring for DEQ programs on implementing an environmental metric data management system (EQuIS); (d) providing leadership and critical support for the Montana State Library to rehire the state's Water Information Systems Manager position; (e) developing agency standard operating procedures (SOPs) for Water, Soil, & Biological Sampling and Environmental Data Management & Reporting for DEQ-led emergency responses under the national Incident Command System (ICS); (f) creating a wiki site to share monitoring plans and metric data with US and Canadian interests regarding selenium loading to Lake Koocanusa from Canadian coal mines; and (g) providing assistance in application development and testing for a new agency Public Comment Submittal Application.

IMTS's Modeling Group supported modeling for TMDL planning in Otter Creek (salinity), Flint Creek (nutrients), Flathead basin (nutrients and sediment), and Powder River basin (salinity), as well as analysis of on-site wastewater (septic) system loading to groundwater for various projects. Other work includes (a) participating in the Elk River (Canada) Technical Advisory Committee as Montana representative for developing a coal mine area management plan for the Lake Koocanusa basin in the US and Canada); (b) developing Arc-Python scripts for a GIS wetland model; (c) developing a monitoring plan for the Otter Creek (Tongue River) watershed; (d) collecting a calibration data set for the SWAT Biozone model and calibrating the model; (e) developing SOPs for acoustic Doppler radar flow meter and solar pathfinder; (f) hosting a three-day workshop in lake modeling with Dr. Steve Chapra from Tufts University; and (g) coordinating with Montana's new climatologist and new State Climate Office staff on climate models and modeling products.

Quality Assurance and Quality Control

The Quality Assurance and Quality Control Section (QAQC) supports the Nonpoint Source Program, WQPB and its contractors by developing and describing the management and technical procedures that will assure the quality of environmental information used to support decisions. This is referred to as a "quality system." It provides WQPB with a practical framework for managing the quality of activities, resulting in environmental determinations and controls.

In 2013, QAQC continued to support WQPB in building processes to support developing water quality criteria, reporting the condition of the state's waters, developing Total Maximum Daily Loads (TMDLs), implementing best management practices, and determining the effectiveness of implementation strategies.

QAQC coordinates with other agencies, conservation districts, watershed groups, and other entities to ensure quality data that can be used in water quality assessments and to ensure continued quality through TMDL development and implementation of projects funded by Section 319 grants administered by DEQ. As the state's monitoring strategy is implemented, numerous project-specific quality assurance project plans (QAPPs) and sampling and analysis plans (SAPs) are developed with assistance from the Quality Assurance Section.

All volunteer groups that receive funding through Section 319 are required to submit a QAPP and/or SAP before monitoring. A General QAPP was developed by the MSU Extension Water Quality Program, Montana Watercourse, and DEQ to provide general data quality guidelines and a basic framework for training volunteer members of monitoring groups. The goal of volunteer monitoring groups may be to evaluate the effectiveness of implementation efforts or trend analysis, and these groups are encouraged to develop clear and thorough QAPPs to serve as blueprints for projects by outlining project goals and objectives. In addition, SAPs document the procedural and analytical requirements for projects. Using these planning documents increase the validity of the data, and quality data will help in making better decisions about the watershed.

In 2013, QAQC collaborated in developing one QAPP/SAP and eleven SAPs from a number of conservation districts, watershed groups, and volunteer monitoring groups, including the Elk Creek Springer Bank Stabilization Project QAPP/SAP; Blue Water Task Force Community Monitoring SAP; Corder Ditch Abandonment Project SAP; Helena Valley Nonpoint Source Assessment Project SAP; West Fork Gallatin Nitrogen Reduction Project SAP; Sun River Watershed SAP; Teton Watershed Monitoring SAP; and various SAPs under the Montana DEQ Volunteer Monitoring Support Program. The goals of the volunteer monitoring were to obtain baseline water quality and trend analysis, monitor the effectiveness of restoration activities, and determine pollutant load reductions.

QAQC's goals for 2014 include coordinating with other sections to develop assessment methods for temperature and electrical conductivity and to develop program QAPPs and project plans. Both efforts should lead to better decision-making. The new assessment methods will provide a structured and consistent approach to assessments for those pollutants and will improve DEQ's ability to make reproducible and defensible decisions about beneficial-use support. Developing QAPPs will help establish the framework for collecting data and making decisions to meet specific project objectives.

Success Story: Swift Creek De-Listing

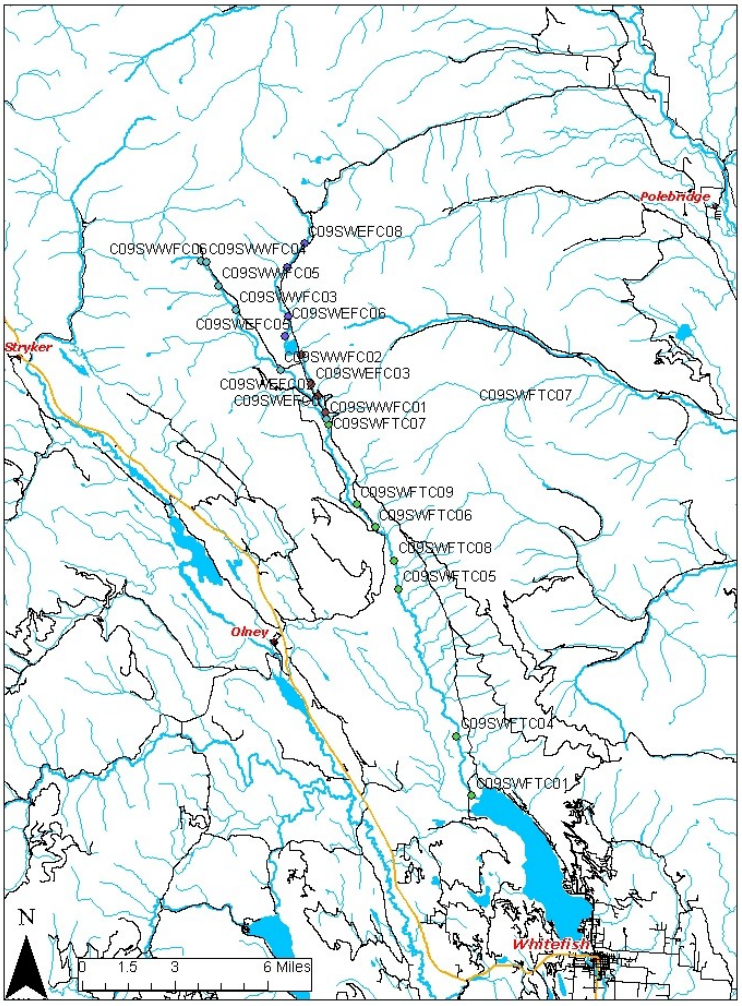
In 1989, DEQ identified three segments of Swift Creek, located in northwestern Montana above Whitefish Lake, as impaired; the segments only partially supported their aquatic life and coldwater fishery uses. The water quality impairments were caused by excess sediment and nutrient pollutants from past logging activities and roads. Logging is now occurring under a comprehensive management plan, and project partners improved road infrastructure to address human-caused sediment sources.

These improvements in logging practices and road infrastructure, along with the knowledge gained by the pollutant source studies, prompted DEQ to re-assess water quality in 2009 and 2011 (http://cwaic.mt.gov/wqrep/2010/assmtrec/MT76P003_030.pdf.)

In 2008, DEQ reviewed the data and found that total phosphorus levels were consistently below Montana's nutrient criteria for the Northern Rockies Ecoregion. McNeil Core data for sediment from 1997 through 2007 showed that fine sediment (<6.35mm) values were below the 35 percent threshold, the value at which Montana FWP and USFS consider bull trout spawning to be threatened. Additionally, pool frequency, large woody debris, and stream width-to-depth ratios fell within the range of expected conditions for streams fully supporting the aquatic life use.

Based on post-project data collection and analysis, DEQ determined that water quality in Swift Creek fully supports aquatic life and coldwater fishery uses, prompting the state to remove all three segments from the impaired waters list in 2012.

Swift Creek, W. Fk. and E. Fk. Swift Creek Monitoring Sites



Partners and Highlights

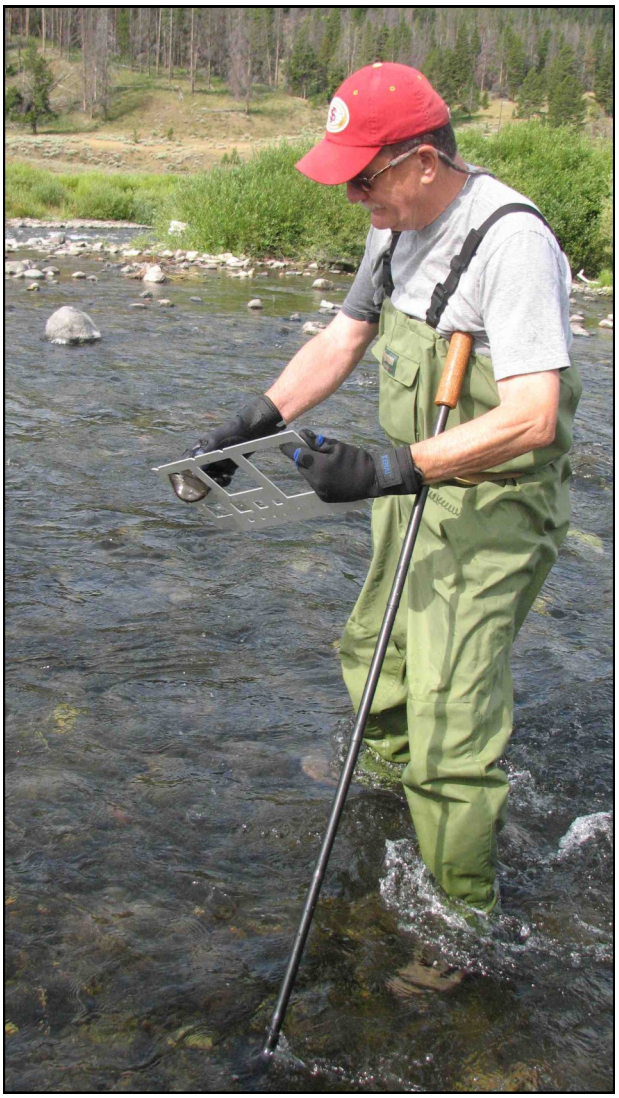
The Water Quality Planning Bureau has met NPS goals and successfully maintained the viability of watershed groups across the state by supporting and coordinating with organizations such as the Montana Watershed Coordination Council, Montana Watercourse, Montana State University Extension Water Quality, Montana Association of Conservation Districts, Montana Wetland Council, and various Montana state and federal agencies.

Volunteer Monitoring Partnership

DEQ's Water Quality Planning Bureau partners with a number of organizations, including Montana State University Extension Water Quality (MSUEWQ), Montana Watercourse, and Montana Watershed Coordination Council (MWCC) to promote volunteer monitoring (VM) efforts across the state.

Restructuring the VM funding program in 2013 included establishing deadlines for applications for laboratory support and requiring more robust sampling and analysis (SAP) preparation. Participation in the program doubled in 2013. Seven groups participated this year, an increase from the three to four groups in the previous three years. Pre-proposal conference calls with Q&A sessions and reference documents, were held in February to provide information and support to groups. A review panel composed of MWCC Monitoring Work Group members reviewed QAPP/SAP drafts, and QAPP/SAP approval was required before funding was distributed.

Changes in the VM lab analyses support program are due in part to feedback provided at a volunteer monitoring session led by MSUEWQ at MWCC's 2012 Summer Forum. To better assess the needs of future VM efforts and funding, MSUEWQ conducted a survey and presented current VM efforts to facilitate conversation about existing resources and opportunities for improvement.



By addressing goals identified in the 2012 survey, 2013 accomplishments included improving outreach to eligible groups, more comprehensive documentation on the WPS Wiki site, completing a SAP template, establishing deadlines for SAP comments and approval, and developing a clear understanding of the deliverables required when participating in the program. Increased use of the VM program was partly the result of discussions about VM funding at the Big Sky Watershed Corps (BSWC) training in January. A partnership of the Montana Watershed Coordination Council, the Montana Association of Conservation Districts, and the Montana Conservation Corps, the BSWC program will continue to be a useful training and information resource for VM.

This year, the Blue Water Task Force, Madison Stream Team, Jack Creek Stream Team, Montana Salinity Control Saline Seep Project, Sun River Monitoring Project, Teton River Monitoring Project, and Little Bitterroot Lake Association received DEQ's support for VM lab analyses. All of these groups have built a solid foundation by participating in the restructured program, meeting the timeline for proposals, which serves to encourage project planning before spring runoff.

VM plays a critical role in linking communities with water quality issues and building important datasets. The Little Bitterroot Lake Association project demonstrated the diversity of projects the funding supports and how data collection throughout the watershed is important to understanding and managing water resources.

Montana Association of Conservation Districts

For more than 70 years, the Montana Association of Conservation Districts (MACD) has contributed to the success of its constituent conservation districts across the state. Created in 1942, MACD is a nonprofit association governed by a statewide board of directors who simultaneously serve as district supervisors in their own jurisdictions. In order to carry out the specific directives of the board, MACD has an office in Helena.

Montana's fifty-eight conservation districts use locally-led and largely non-regulatory approaches to address natural resource issues. Districts have a decades-long history of conserving Montana's resources by matching the needs of local people with technical and financial resources, initiating good conservation practices to benefit all Montanans.

2013 was a productive year for MACD in assisting with NPS pollution issues across the state. Some activities included:

- Administering the mini-grant program for DEQ, allowing thousands of dollars to be sent to dozens of groups across Montana to address NPS issues.
- Further cementing MACD's close relationship with the Montana Watershed Coordination Council by sharing the same office space.
- Directing the Conservation Advisor for Livestock Operations (CALO) program and supporting publication of an operator's guide to help livestock producers self-assess their operations and distributing the document throughout Montana for producers to use on their own.

In 2013, MACD's Irrigation Water Management program included nearly seventy fields. The program helps growers efficiently manage their water resources, improving water quality in many ways. In addition, conservation districts across the state continue to carry out Montana's Natural Streambed and Land Preservation Act (310 permit) program. And finally, MACD is part of a nationwide movement to improve soil health, addressing NPS issues by managing soil to reduce the need for herbicides, pesticides, insecticides, and fertilizers.

Montana Watershed Coordination Council

The Montana Watershed Coordination Council (MWCC) is a non-governmental organization working statewide to support information, education, and develop capacity for local watershed work. MWCC's mission is uniting and supporting Montana's watershed communities to promote healthy and productive landscapes.

In January 2013, MWCC hosted its Annual General Meeting. The MWCC Steering Committee presented annual work plans, which include pursuing non-profit (501(c)3) status and hiring an executive director. Members were elected to the Board of Directors and the Big Sky Watershed Corps Committee was established. Gary Burnett, Executive Director of the Blackfoot Challenge, spoke to the membership about community-based approaches to conservation for the 21st century. Because 2013 was a legislative-session year, MACD Executive Director Jeff Tiberi talked about the Montana Legislature and how local groups can participate in the process. DEQ Director Tracy Stone-Manning and DNRC Director John Tubbs also spoke to members about the importance of watershed work in Montana.

MWCC was busy throughout the spring. In February, MWCC hosted Watershed Wednesday at the Capital, providing an opportunity for local groups to come to Helena to let legislators know about their work. In May, MWCC hosted a spring training on watershed science at the BBar Ranch near Emigrant, Montana. Nearly thirty watershed professionals gathered to improve their understanding of hydrology. At the end of May, MWCC partnered with the Montana Wetland Council to host the biennial Wetland and Watershed Awards. MWCC honored Adam Sigler, from Montana State University Extension Water Quality, for his dedication to citizen-based monitoring in Montana. MWCC also honored the Arctic Grayling CCAA Management Team for their work to restore water quantity and quality in the Big Hole.

MWCC received 501(c)3 designation from the Internal Revenue Service in August, which will allow MWCC to diversify its funding resources to include private foundation opportunities and become a more sustainable organization. The MWCC Board of Directors also approved rental of office space in the new MACD office, finally giving the organization a home base.

In August, MWCC partnered with MACD and successfully applied to host a Big Sky Watershed Corp (BSWC) member in 2014. The BSWC member will work to increase the capacity of local watershed organizations in areas with limited resources. The Water Activities Work Group (WAWG) hosted a tour of water quality restoration projects in the Sun River and Teton River watersheds. With local watershed coordinator Alan Rollo and Montana Salinity Control Association Director Jane Holzer serving as tour guides, participants were able to view and discuss projects encompassing a wide variety of restoration techniques. The tour provided practical examples of when, where, and how specific techniques might be used to achieve the greatest results.

MWCC hosted the 2013 Watershed Symposium in October (more information is available on page 17). Also in October, the board voted to hire an executive director to lead MWCC's operations. 2014 is expected to be a big year for MWCC, with renewed vision, purpose, and the resources to build watershed capacity throughout Montana.

Montana Wetland Council

The Montana Wetland Program is part of DEQ's Technical and Financial Assistance Bureau in the Planning, Prevention and Assistance Division. DEQ's Wetland Program provides state leadership to conserve wetlands for their water quality, water quantity, habitat, and flood control benefits and leads the Montana Wetland Council to develop and implement the state wetland plan.

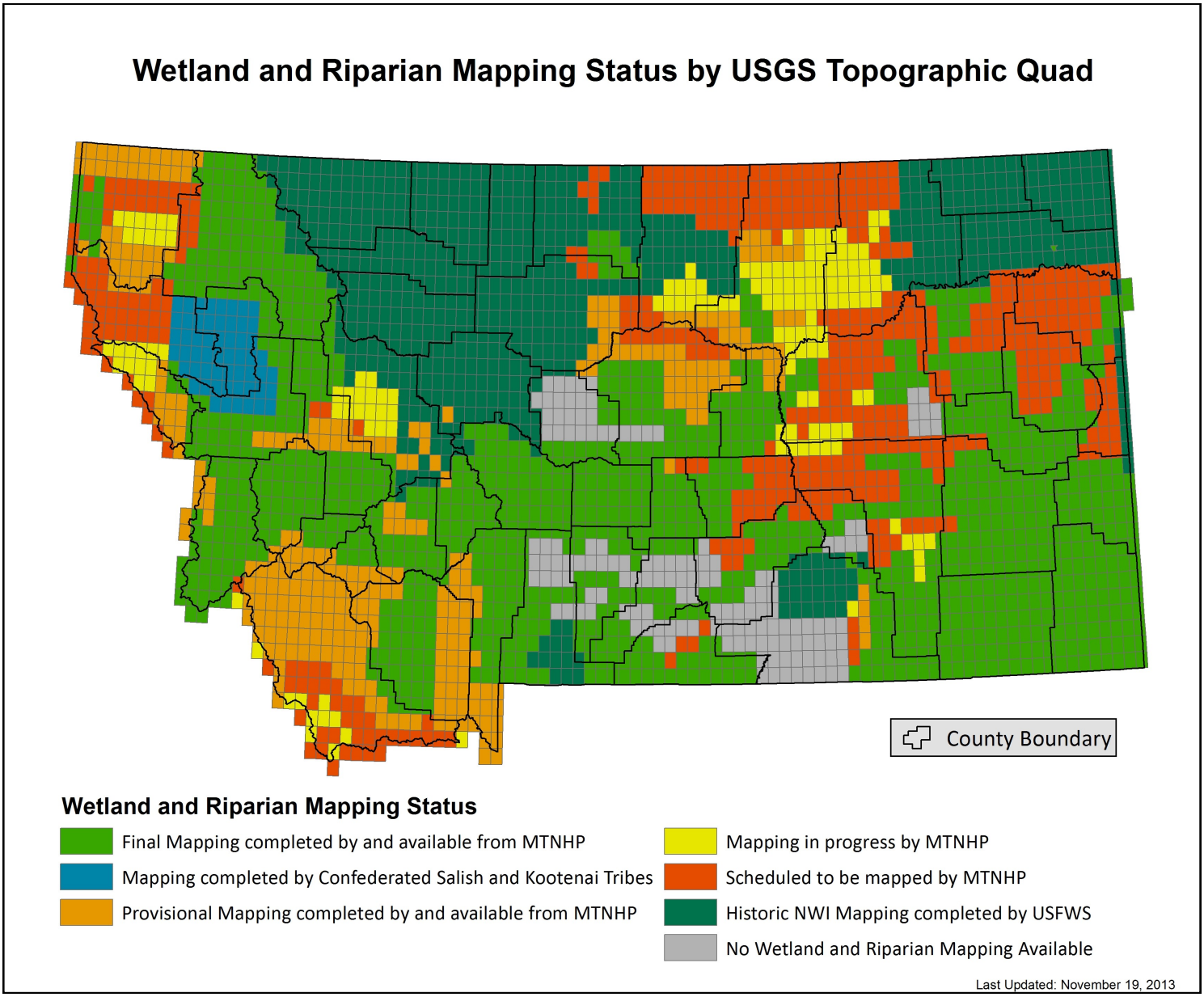
The Montana Wetland Council (MWC) is an active network of diverse interests that works cooperatively to conserve and restore Montana's wetlands and riparian ecosystems. Montana's overarching wetland goal is no overall net loss of the state's remaining wetland resource base (as of 1989) and an overall increase in the quality and quantity of wetlands in Montana. MWC also supports a riparian goal to maintain, protect, and restore the ecological integrity of riparian areas. The council coordinated the update of the 2008–2012 state wetland plan, creating an action-oriented strategic plan titled "Priceless Resources: A Strategic Framework for Wetland and Riparian Area Conservation and Restoration in Montana 2013 –2017" available online at http://deq.mt.gov/wqinfo/wetlands/wetlandscouncil.mcpx

The state plan prioritizes and directs collective efforts in conserving and restoring wetlands and riparian areas and is supported by the governor and natural resource directors. MWC is creating a broader organizational structure to more effectively coordinate and sustain the energy, knowledge, and resource of its participants as an action-oriented network, including collaborative working groups to address:

- restoration, protection, and management
- public communication and education
- mapping, monitoring, and assessment
- local government, vulnerable wetlands, and public policy

As part of the state plan update, MWC assessed past accomplishments and highlighted several shining examples from each of the eight original strategic directions. Accomplishments in 2013 include wetland and riparian mapping as shown on page 16. Currently seven full-time photo interpreters with the Montana Natural Heritage Program are developing accurate wetland and riparian digital mapping information for planning, protection, and restoration decision-making. Wetland and riparian mapping is one of fourteen Montana Spatial Data Infrastructure Framework Layers. To date, fourteen funding partners have recognized the value of a statewide wetland data layer and have contributed financially to help make the statewide digital mapping goal a reality. Our goal for next year is to fund the remaining 29 percent of Montana, which lacks post-2004 wetland and riparian mapping.

Another 2013 highlight was the biennial Wetland and Watershed Stewardship Award Ceremony. One award recipient, the Blackfoot



Trumpeter Swan Restoration Program, has championed wetland habitat conservation, including 5,000 acres of prime wetlands, which in 2012 saw the return of at least twenty trumpeter swans to the Blackfoot watershed. Pictured left is Governor Steve Bullock and his son releasing a trumpeter swan in May 2013 as part of the Blackfoot Trumpeter Swan Restoration Program, a collaborative effort of landowners, local schools, nonprofit organizations, and state and federal agencies that are returning this iconic species to the Blackfoot watershed.

In other accomplishments, Montana Wetland Council participants created a new professional development training series in 2010 that offered continuing education credits eligible for Professional Wetland Science Certification. Now in its third year, this three-day training at Montana State University has helped to increase the number of certified Professional Wetland Scientist working in Montana from five to more than twenty. Other professional training in 2013 included five field-based wetland plant identification workshops across Montana and training to install beaver deceivers and other devices that allow the beneficial aspects of beaver dams (groundwater recharge, sediment retention, nutrient assimilation) without damaging property and infrastructure.

The Montana Wetland Council meets three times per year to discuss diverse topics, has an active listserv and website, and welcomes all to participate in the collaborative work of wetland and riparian protection, restoration, and management. For more information visit our website at http://www.deq.mt.gov/wqinfo/Wetlands/WetlandsCouncil.mcpx.

2013 Watershed Symposium

20 Years Together: Looking Back, Moving Forward

The Montana Watershed Coordination Council organized its fourth Watershed Symposium in Montana, held in Missoula this year, with 133 attendees coming from throughout the state. The 2013 Watershed Symposium provided a statewide benefit essential for watershed professionals who have limited funding and time to attend trainings.

Attendees represented a broad spectrum of watershed professionals in Montana, including conservation districts and watershed groups, state and local government employees, universities, consultants, and natural resource non-profit organizations.

The main goal of the symposium was to improve the functional capacity of watershed groups, conservation districts, and other watershed professionals throughout Montana, which was accomplished through diverse trainings and presentations. The workshops were especially valuable because attendees had from three to six hours to spend learning about a specific topic.

Presentation sessions were also run concurrently, providing a variety of topics to choose from based on individual needs. Wednesday's sessions focused on different capacity needs. The morning programs included presentations and a discussion on how various state and federal agencies prioritize their work, In addition, a local watershed group presented an example from the Upper Clark Fork on how they work within these public programs to leverage opportunities. Concurrently, there was a discussion on social media and sharing ideas and lessons learned on how to make the most of these tools.

Wednesday afternoon provided a series of talks focused on various GIS tools that can be used to manage, explore, and understand natural resources. Other afternoon sessions explored the Montana Water Supply Initiative and use of an organizational capacity assessment tool. During the capacity session, three watershed organizations in different stages of development completed an assessment tool to determine their own capacity needs. The three groups then discussed the tool with the audience and shared their experiences. All three groups found the tool to be a useful resource for evaluating capacity needs.

The symposium provided a great opportunity to bring together watershed professionals from throughout Montana. A diverse group of watershed professionals, all who face various challenges, benefitted from networking with peers and sharing valuable lessons. Coordinators have frequently expressed how important MWCC events are, noting that the support network is as valuable as the topics and materials covered. Symposium attendees represented diverse communities, and are now better equipped, reenergized and with more knowledge and greater ability to implement effective watershed projects, engage their communities, and better manage natural resources.

Looking Forward

Montana continues to demonstrate that the Nonpoint Source Management Program is committed to and capable of addressing nonpoint source pollution in Montana and that a voluntary, incentive-based approach works well in this state. The state has many dedicated partnering agencies, non-governmental organizations, and concerned citizens who participate in addressing nonpoint source water quality pollution.

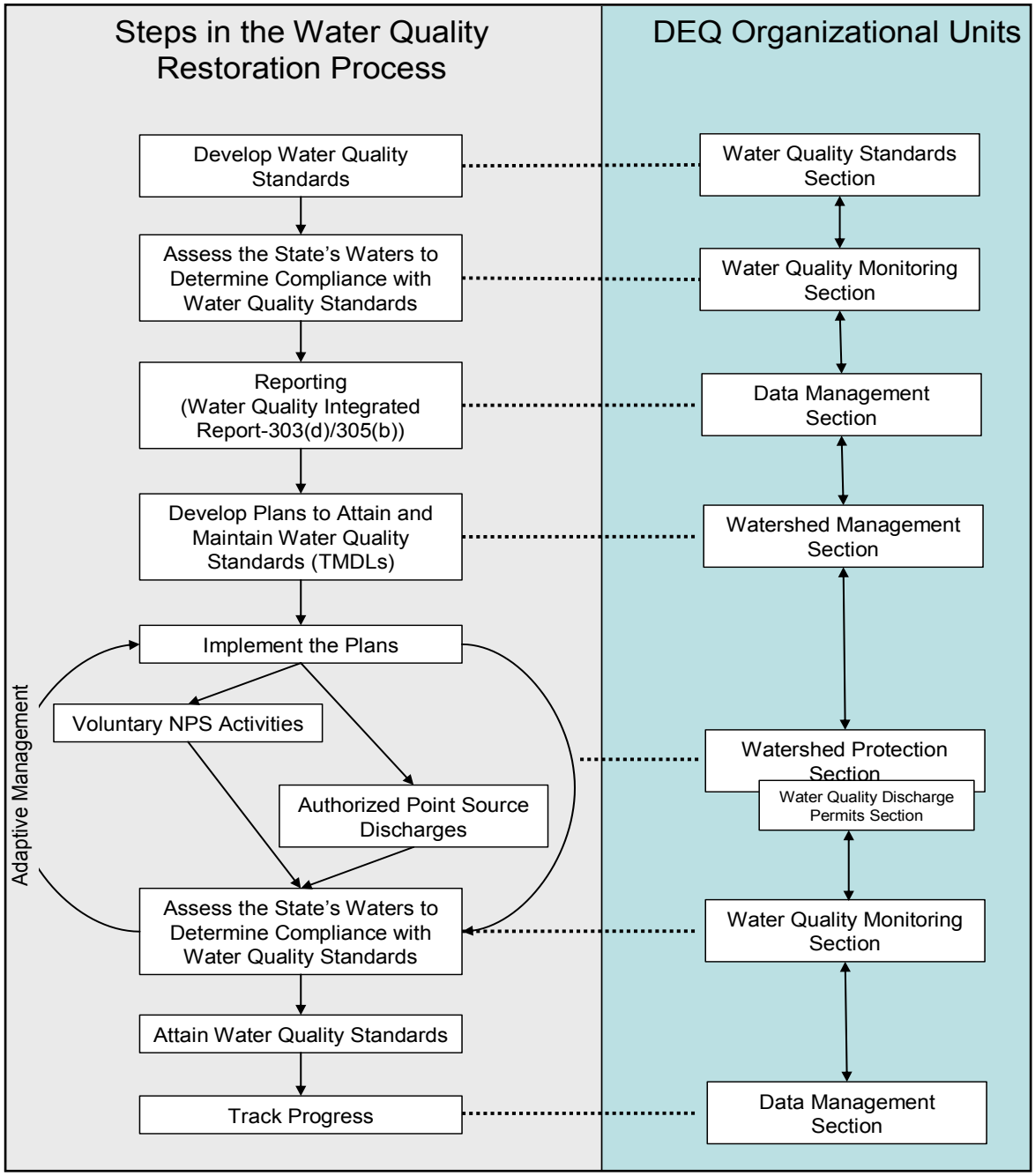
Priorities for 2014 include:

- Collaborating with the advisory Nutrient Work Group, WQS drafted rules for nutrient standards and their implementation; the rules are still being reviewed and modified. DEQ hopes to present BER with a nutrient standards package in 2014.
- Continuing to develop and implement watershed-based TMDLs
- Reviewing and accepting watershed restoration plans
- Completing TMDL implementation evaluations

A major concern is the continued decrease in federal Section 319 funding to Montana. These funds are essential for providing a clean and healthful environment. Montana's 319 funds support substantial agency activities, coordination, planning and programs, and on-the-ground projects in communities throughout the state, creating jobs while protecting and restoring Montana's irreplaceable natural resources. Without this funding the local economies and environments would suffer. Potential negative effects from the proposed budget cuts for Section 319 may be compounded by possible decreased federal funding to other natural resource agencies, including the NRCS, USFS, and EPA. These cuts, in conjunction with additional requirements for the Section 319 program (e.g., limiting programmatic funding to 50 percent of the state's 319 award), may require the Section 319 program to shift priorities to meet these requirements.

Appendices

Appendix A – Water Quality Planning Bureau Integrated Approach



1. The Water Quality Standards Section defines the goals for a waterbody by designating its uses, setting criteria to protect those uses and establishing provisions to protect waterbodies from pollutants.
2. The Water Quality Monitoring and Assessment Section monitors water quality conditions and trends statewide and assesses sources and severity of pollution problems.
3. The Data Management Section reports assessment findings.
4. The Watershed Management Section develops TMDL plans for waters not meeting standards.
5. The Watershed Protection Section supports the NPS implementation of TMDLs.
6. Water quality standards developed by the Water Quality Standards Section are used throughout DEQ, such as in the Montana Pollutant Discharge Elimination System program, to ensure clean water protection by all permitted point-source dischargers.

Appendix B – Montana Nonpoint Source Management Program's Five-Year Action Plan and Priorities

The Montana Nonpoint Source (NPS) Management Program's goal is to provide a clean and healthy environment by protecting and restoring water quality from the effects of nonpoint sources of pollution. The short-term (five-year) goal of Montana's NPS Management Program is to demonstrate significant progress in protecting and restoring Montana's water quality from nonpoint sources of pollution as measured by achieving the actions outlined in the NPS Management Plan. These actions focus on three specific areas: resource-specific goals, policy-specific goals, and education and outreach-specific goals.

Five-year Action Plan for addressing NPS Pollution – Resource Related Actions

No.	*Responsible Party*	*Actions (Outcomes/Objectives)*	*Measurable Milestones/Outputs*	*2013 Accomplishments*
R1*	DEQ, EPA	Complete Water Quality Improvement Plans (WQIPs) and necessary TMDLs.	• At least 500 additional TMDL pollutant-waterbody combinations between 2012 and 2014	• 176 TMDL pollutant-waterbody combinations approved by EPA in 2013 (410 approved between 2012 and 2013).
R2*	DEQ	Conduct statewide water quality assessments.	• 130 water quality assessments completed by 2014	• Monitoring occurred on over 200 waterbodies for water quality assessments, TMDL support efforts, and 23 statewide fixed-station monitoring. Significant progress on data analysis to determine impairment has occurred on 100 waterbodies, and information is currently being updated in DEQ's WARD database.
R3*	DEQ	Review/update Water Quality Integrated Report (305(b)/303(d)).	• Updated reports in 2014 and 2016	• The 2014 Integrated Report was under development in 2013 and will be released in early 2014.
R4	DEQ	Re-evaluate the chemical, physical, and biological condition of reference sites.	• At least 100 reference sites re-evaluated by 2017	• In 2012, WQS began re-evaluating 184 DEQ-identified reference sites across the state to further refine and verify the accuracy of the reference sites. Re-evaluating these reference sites will be a multi-year project.
R5*	DEQ	Work with watershed groups to develop watershed restoration plans (WRPs).	• 20 DEQ-accepted WRPs by 2017	• DEQ accepted 3 WRPs in 2013. See Appendix G for a complete list.
R6*	DEQ	Encourage and fund WQIP- and WRP-directed NPS watershed restoration projects, including demonstration projects, for adoption of new technology.	• Annually fund on-the-ground watershed restoration activities	• 8 Watershed Restoration Plan projects were funded in 2013. 2014 319 project proposals were accepted, reviewed, selected, and are awaiting final development of contract statement of works (SOWs).

R7	DEQ	Identify the TMDL Planning Areas having WQIPs and TMDLs in which at least some implementation activity has occurred during the previous calendar year.	• Annual reporting spreadsheet included in NPS Annual Report	• Implementation activities occurred in 29 TMDL Planning Areas during 2013. See Appendix H for a complete list.
R8*	DEQ	Develop and implement a monitoring strategy for Section 319 restoration activities for effectiveness and pollutant load reductions.	• Approved monitoring strategy by 2017	• WPS hired an intern in 2013 to evaluate 319 project effectiveness; a complete report will be available in 2014.
			• 100% of projects for nutrient and sediment reduction reported to EPA Grant Reporting and Tracking System	• All projects reported for 2013. WPS began developing guidance for estimating load reductions in 2013.
R9*	DEQ	Conduct TMDL implementation evaluations (TIE).	• Complete 20 reviews by 2017	• Four sub-watersheds were chosen for TIE development in 2013 and are currently in progress.
R10	DNRC	Work with forest agency partners (especially DNRC Forestry Assistance) to ensure effective forestry BMP and SMZ activities.	• Biannual reports on forestry BMP audits	• The Montana Forestry Best Management Practices (BMP) Working Group met once in 2013 to discuss current and on-going forest BMP activities in the state. The group is currently working on updating Water Quality BMPs for "Montana Forests," a popular publication used by forest operators for BMP information, and planning for the 2014 field review season.
R11	DNRC	Work with forest agency partners to develop assessments to ensure BMPs and SMZs are protecting riparian and wetland functions.	• Assessment of BMP and SMZ adequacy for riparian and wetland functions	• BMP field assessments are conducted every other year, with the next assessment scheduled for 2014.
R12	DNRC, Plum Creek	Assess the effectiveness of SMZ and HCPs.	• Reporting from the resource agencies on SMZ and HCPs by 2017	• No reportable activity.
R13*	DEQ	Provide reviews and comment on outside agency proposed projects that may have an effect on NPS pollution.	• Reviews completed and comments provided as appropriate	• DEQ reviewed and commented on over 10 outside agency projects in 2013 to request consistency with NPS BMPs.

R14	DEQ	Develop, maintain, and enhance Clean Water Act Information Center (CWAIC online) to provide public access.	• System operable and available to public	• The Data Management Group developed and implemented upgrades on two of its major applications: CWAIC version 3 and WARD phase 3. The updated CWAIC site provides enhanced Web-based data searching and mapping. The new data warehouse architecture enhances query efficiency and streamlines system management, reducing operating and maintenance costs for the program.
R15	DEQ	Administer MT-eWQX water quality database system.	• Upload all ambient water quality monitoring data collected by DEQ, its contractors, or data partners to EPA National STORET/WQX water quality data warehouse	• IMTS Data Management processed 167 water quality data packets from 46 unique monitoring projects into its water quality database – Montana EQuIS for WQX (MT-eWQX). Of the 167 data packet transactions, 159 were new data inserts and 8 were data updates (revisions or corrections).
R16	DEQ	Administer electronic data deliverables (EDD) submittal process for non-DEQ eWQX data submittals using EQuIS data management tools.	• Provide Web access to data submittal process information, data management tools and training, and technical assistance to data partners and contractors	• ITMS conducted 167 data transactions to WQX through 11/26/2013. IMTS did not conduct any training MT-eWQX events for data partners during 2013.
R17*	DEQ	Develop nutrient models for large rivers (e.g., Missouri, Yellowstone).	• Models developed for at least 2 large river segments by 2017	• Lower Yellowstone River nutrient model has been published. • Missouri River (Toston dam to Canyon Ferry) nutrient data collection has been completed, and model development is in progress. Upper Yellowstone River nutrient model development started in 2013. • Data collection for dissolved oxygen data in prairie streams began this year as part of a multi-year nutrient study.
R18*	DEQ	Protect, restore, and create riparian and wetland buffers designed to prevent or reduce NPS pollution.	• 3 miles of riparian and/or wetland buffers as part of Section 319 contracts	• Multiple active projects in 2013 include protecting, restoring, or creating riparian buffers to reduce NPS pollution. These projects (212060 [2,900'], 211073 [375'], 211083 [1,222'], 213033 [4,000'], 213040 [1,200'], 212058 [4,400'], 212056 [2,000'], 208030 [120']), will eventually create more than 16,217 feet (3.07 miles) of buffers.
R19	DEQ	Identify watersheds where NPS pollution from AFOs can be reduced.	• Identify 3 high-priority watersheds for restoration work by 2017	• Through the CALO contract with SWCDMI, DEQ identified the Beaverhead, Big Hole, Shields, and Stillwater rivers as watersheds where NPS pollution from AFOs can be reduced.

R20	DEQ	Encourage additional stormwater quality improvement projects funded through the state revolving fund program.	• At least 4 stormwater projects funded by 2017	• No activity in 2013.
R21*	DEQ	Manage and implement the NPS program in efficient and effective manner, including fiscal management.	• Provide consistent guidance on state reporting requirements	• WPS implemented revised 319 contract reporting requirements in 2013.
			• Conduct contract "kick-off" meetings	• WPS conducted 11 kick-off meetings with contractors in 2013.
			• Ensure 75% of 319 contracts are closed by initially-agreed date	• 29% of 319 contracts closed in 2013 were completed by the initial contract end date.
			• Refine watershed project field evaluation form	• WPS hired a student intern for summer and fall 2013 to develop and assess previous 319 funded projects. A field evaluation form was developed for this project. A total of 14 project site visits were completed and a report is in progress.

** Indicates a high priority for the NPS Program*

Five-year Action Plan for addressing NPS Pollution – Policy Related Actions				
No.	***Responsible Party***	***Actions (Outcomes/Objectives)***	***Measurable Milestones/ Outputs***	***2013 Accomplishments***
P1*	DEQ, FWP, MWCC, USACE, USFS, NRCS, BLM, DNRC, Individual watershed groups, private consulting firms, USFWS, MACD, others	Develop an interagency policy for river restoration work, emphasizing restoration of natural processes.	• Interagency policy supported by a wide range of government, non-profit, and private entities by 2017	• A meeting with FWP, USFWS, and DEQ (both Permitting and WPS) has been scheduled for January 2014; participation from other agencies is anticipated.
P2*	DEQ in collaboration with agencies, watershed groups, and other interested parties	Develop and implement a strategy for identifying priority watersheds on which to focus technical and financial resources, leading to two 12-digit HUC watersheds achieving water quality standards.	• Strategy document, set of action items, and at least 1 action item completed by 2017	• Discussions ongoing with NRCS and USFS in 2013.
P3*	DEQ	Develop and implement DEQ water quality improvement MOUs with agencies, including USFS, BLM, DNRC, MDT, NRCS, and MFWP.	• 3 MOUs established or revised by 2017	• DEQ and USFS-Northern Region revised an existing MOU in 2013.
P4	DEQ	Assist in efforts to develop cumulative effects assessment strategies for groundwater in high-density septic/development areas.	• Provide assistance with developing 5 assessment strategies	• The DEQ Method for Estimating Attenuation of Nutrients from Septic Systems (MEANSS) assesses the potential significance of nutrient loading from septic systems within the watershed; MEANSS has been used in five TPAs to assess nutrient loading: Bitterroot, Bison, Flint, Little Blackfoot, Lower Gallatin. Ongoing efforts, supported in part by 319 funds, including a 2012 contract in the Lake Helena watershed.

P5	DEQ, DNRC, NRCS, irrigation districts, CDs, watershed groups, private landowners	Provide technical and/or financial support to efforts designed to reduce irrigation-induced NPS pollution.	• Technical and/or financial support provided to at least 3 projects	• 211075 (Corder Ditch), 211081 (Big Hole-Wise River), 212056 (Blue Water Task Force), and 212057 (Jefferson Canal), 213023 (Lost Horse Creek Streamflow Enhancement).
P6*	DEQ	Develop numeric nutrient water quality standards and implementation procedures for surface waters.	• Standards and implementation procedures in place by 2012	• The criteria have been developed, and DEQ continues to work with stakeholders on the details of implementation.
			• BER-approved nutrient trading policy for point/nonpoint sources	• Nutrient trading regulations are available in DEQ-13.
P7*	DEQ	Develop technical basis for a lake classification system based on nutrient status.	• Lake classification system by 2017	• No activity.
P8*	DEQ	Develop and circulate numeric standards for all pesticides identified in Montana groundwater and surface waters.	• Adoption of numeric standards for all pesticides within 4 years of DEQ notification of detection in state waters	• No activity in 2013; WQS continues communication with Dept. of Agriculture and plans to incorporate changes if necessary in 2015.
P9	counties, with DEQ support	Encourage the establishment of additional Water Quality Protection Districts (WQPD) within urban areas.	• One additional WQPD established by 2017	• No activity.
P10*	cities and counties	Incorporate NPS pollution prevention into city and county planning processes.	• By 2017, 3 additional communities have incorporated NPS pollution prevention into local planning processes	• No activity.
P11	DEQ	Support improved urban stormwater management and information sharing through the MS4 task force.	• Active MS4 task force by 2013	• The MS4 Task Force is now scheduled to meet once per year, with the next meeting scheduled for the 2014 Stormwater Conference.
P12*	DEQ, MWCC, collaborate with other federal, state, and local agencies	Develop a system or network for long-term monitoring that will produce data to evaluate water quality trends in waterbodies with completed TMDLs.	• Develop system/network architecture by 2015	• No activity.
			• Begin implementation by 2017	• No activity.
P13	DEQ	Develop guidance for water quality monitoring.	• Guidance for monitoring under Section 319 contracts	• NPS staff are developing guidance on appropriate methodologies for estimating load reductions.
			• QAPP guidance	• QAPP elements have been incorporated into the SAP template.
			• SAP guidance	• A SAP template was developed for Volunteer Monitoring and is being adapted for more general use with 319 projects.

P14	DEQ, MWCC, MSUEWQ	Provide technical and financial support to volunteer monitoring groups.	• Continue funding for laboratory analysis	• DEQ funding for lab analyses was restructured to improve assistance in the development of QAPPs/SAPs for FY13 leading to twice the number of applicants in 2013.
			• Provide on-going technical support for development of QAPPs and SAPs	• WPS staff reviewed 7 volunteer monitoring SAPs in 2013.
P15	DEQ	Develop a nutrient trading policy that encourages nutrient load reductions consistent with WQIP/ TMDLs.	• Nutrient Trading Policy and demonstrated effective trades	• The Nutrient Trading Policy was approved by BER in December 2012. A trade agreement has been developed by the city of Helena and incorporated into the city's wastewater facility permit.

** Indicates a high priority for the NPS Program*

Five-year Action Plan for addressing NPS Pollution – Education and Outreach Actions				
No.	***Responsible Party***	***Actions (Outcomes/Objectives)***	***Measurable Milestones/ Outputs***	***2013 Accomplishments***
EO1*	MTWC, DEQ	Incorporate school lesson plans that address water resources and NPS pollution issues.	• Incorporate up to 20 lessons into the appropriate units of study at 60 elementary schools, 30 middle schools, and 20 high schools	• Montana Watercourse (MTWC) provided training to over 1,100 students and 34 teachers in 2013 on topics related to water quality in Montana.
EO2*	MWCC	Provide support and promote the development and coordination of watershed groups through MWCC activities, training workshops, advertising campaigns, etc.	• Annual watershed coordinator training	• MWCC hosted "Watershed Science" training in May 2013.
			• Annual watershed tour	• MWCC Water Activities workgroup hosted a tour of restoration sites in the Sun and Teton watersheds in August 2013.
			• Bi-weekly newsletter	• MWCC published the weekly e-news consistently throughout 2013.
			• Coordinate a volunteer water monitoring group to collect water quality data and human-effects info within specific watersheds.	• The MWCC Monitoring Work Group contacted volunteer monitoring program leaders and used a questionnaire to develop profiles of several volunteer monitoring efforts across Montana.
EO3*	DEQ	Support riparian and wetland buffer education campaigns.	• Support 5 county-wide campaigns by 2017	• WPS funded the Missoula Water Protection District and Gallatin Local Water Quality District to re-run the Riparian Media Campaign.
EO4	DEQ, MDT, MSU	Promote and support BMP training for road maintenance personnel.	• Compile library of training materials	• No activity.
			• Bi-annual training for road maintenance personnel	• No activity.
EO5	DEQ	Develop and deliver multi-media presentations that teach basic concepts in reducing NPS pollution from agricultural sources.	• Develop at least 2 presentations	• No activity.
			• Deliver each presentation twice by 2017	• No activity.
EO6	DEQ	Support conferences that address stormwater pollution prevention and control strategies.	• Two stormwater conferences held between 2012 and 2017	• WPS staff is participating in planning the 2014 Stormwater Conference, led by Montana Watercourse.

EO7	DEQ	Identify and/or develop monitoring and assessment methods for private landowners to inform land management decisions.	• Develop self-assessment tool for private landowners by 2017	• In 2012, the CALO project developed the On-Site Guide for Livestock Operators. In 2013, the guide was printed and distributed throughout the state by the Montana Association of Conservation Districts.
EO8	DEQ, MWCC, MSUEWQ	Provide training opportunities for volunteer monitors.	• Training provided to 10 watershed groups by 2017	• MWCC provided SAP training to watershed groups interested in the volunteer monitoring program. MSUEWQ also provided level 3 volunteer monitoring training to two groups.
EO9	DNRC, Montana Logging Assoc., and MSU Forestry Ext.	Promote and conduct forestry BMP and stewardship educational workshops and programs.	• Annual BMP/SMZ education workshops for loggers and landowners • Forest stewardship program targeting small landowners throughout Montana	• In cooperation with the Montana Logging Association, DNRC put on its annual BMP/streamside management zone (SMZ) workshop in five Montana cities in May 2013. Additionally, DNRC conducted pre-operation site visits to discuss specific BMPs and the SMZ law with forest operators. Montana State University Extension Forestry offered six Forest Stewardship courses, an education program for family forest landowners, in 2013.

** Indicates a high priority for the NPS Program*

Appendix C – Fiscal Year 2013 Section 319 Project Awards

Project Name	Project Sponsor	DEQ Project Officer	DEQ Contract Number	319 Funds	Non-Federal Match Funds	Total Project Cost
Watershed Restoration Projects						
Watershed Restoration Plan Implementation, Education & Outreach	Bitter Root Water Forum	Laura Andersen	213024	$ 19,000	$ 14,000	$ 33,000
Lost Horse Creek Streamflow Enhancement	Clark Fork Coalition	Laura Andersen	213023	$ 105,000	$ 206,000	$ 311,000
Lower Gallatin Watershed Restoration Plan	Greater Gallatin Watershed Council	Ann McCauley	213025	$ 30,000	$ 20,000	$ 50,000
Muddy Creek Tributaries Riparian Improvements	Sun River Watershed Group	Mark Ockey	213028	$ 87,000	$ 86,000	$ 173,000
Upper Teton Watershed-Riparian Improvements	Teton River Watershed Group	Mark Ockey	213026	$ 72,600	$ 87,000	$ 159,600
East Fork Bitterroot River, Watershed Improvement Project	Trout Unlimited	Laura Andersen	213020	$ 40,000	$ 30,000	$ 70,000
Upper Little Blackfoot River-Metals Restoration Strategy	Trout Unlimited	Elena Evans	213029	$ 20,000	$ 18,300	$ 38,300
Upper Ninemile Creek Mine Reclamation	Trout Unlimited	Elena Evans	213033	$ 300,000	$ 255,000	$ 555,000
Watershed Restoration Projects Sub-Total				*$ 673,600*	*$ 716,300*	*$ 1,389,900*
Education and Outreach Projects						
Protecting Bozeman's Surface Waters	City of Bozeman	Ann McCauley	213031	$ 10,000	$ 14,000	$ 24,000
Volunteer Monitoring-Addressing Shared Statewide Goals	MSU Extension-Water Quality	Elena Evans	213032	$ 22,000	$ 16,668	$ 38,668
Storm Water Conference	Montana Watercourse	Elena Evans	213030	$ 18,000	$ 12,056	$ 30,056
North American Envirothon	SWCDMI	Laura Andersen	213021	$ 20,000	$ 70,000	$ 90,000
Effective Watershed Communication	MWCC,Inc.	Robert Ray	213027	$ 9,000	$ 6,000	$ 15,000
FY2014 Education & Outreach Mini-Grants	SWCDMI	Laura Andersen	213022	$ 21,000	$ 14,000	$ 35,000
Education and Outreach Projects Sub-Total				*$ 100,000*	*$ 132,724*	*$ 232,724*
Total				**$ 773,600**	**$ 849,024**	**$ 1,622,624**

Appendix D – Section 319 Projects Closed in 2013

Contract Number	Contractor	Project Name	Amount Expended	Final Payment Date	Close on initially agreed date
208030	Lower Musselshell CD	Musselshell Watershed Restoration	$95,000.00	8/20/2013	No
208044	Granite CD	Flint Creek TMDL	$156,318.05	8/21/2013	No
209063	Park Conservation District	Shields River Watershed Restoration Plan	$22,298.70	1/18/2013	No
209079	Greater Gallatin Watershed Council	Lower Gallatin	$89,537.36	6/28/2013	No
210109	Big Hole Watershed Committee	Big Hole Restoration & Education	$126,500.00	9/18/2013	No
210110	Blue Water Task Force	West Fork Nitrogen Monitoring Project	$32,000.00	1/7/2013	No
210115	Swan Ecosystem Center	Swan TMDL	$49,719.62	8/12/2013	Yes
210116	Watershed Restoration Coalition	Upper Clark Fork Tributary Restoration	$93,985.03	7/29/2013	No
210147	Park City CD	TMDL Coordination Assistance	$4,423.74	2/21/2013	Yes
211070	SWCDMI	Education & Outreach Mini-Grants	$26,036.79	7/31/2013	No
211071	Montana Watercourse	Riparian, Stormwater & Riparian Outreach	$48,000.00	8/20/2013	Yes
211074	SWCDMI	Strength Watershed Communities through E&O	$25,000.00	8/16/2013	No
211081	Big Hole Watershed Committee	Big Hole Watershed Restoration	$83,500.00	10/4/2013	Yes
211085	Little Big Horn College	Apsáalooke Watershed Education & Outreach Program	$4,324.88	8/15/2013	No
213040	Lolo National Forest	Realign Clear Creek Road to Improve Water Quality	$45,371	7/2/2013	N/A

Appendix E – Section 319 Mini-Grant Projects in 2013

Contract	Project Sponsor	Project Title	Award
Mini-Grants Awarded in March 2013 by SWCDMI (DEQ contract #212068)			
SWCDMI-MG13-05	Greater Gallatin Watershed	Gallatin Stormwater Awareness Project	$ 863
SWCDMI-MG13-06	Lolo Watershed Group	Channel Migration - Erosion on Lolo Creek	$ 2,000
SWCDMI-MG13-07	Mt. FW&P	Pumpkin Creek Willow Stabilization	$ 2,000
SWCDMI-MG13-08	Sweet Grass County Conservation District	"4 - W's Workshop"	$ 1,600
SWCDMI-MG13-09	Watershed Education Network	Western Montana Stream Monitoring	$ 1,830
SWCDMI-MG13-10	Whitefish Lake Institute	Viking Creek Investigation	$ 1,571
Mini-Grants Awarded in October 2013 by SWCDMI (DEQ contract #213022)			
SWCDMI-MG14-01	Clark Fork Coalition	Educating River Stewards of Tomorrow	$ 2,000
SWCDMI-MG14-02	Beaverhead Watershed Committee	Bioengineering Workshop	$ 2,000
SWCDMI-MG14-03	Bitter Root Water Forum	Improving Water Quality/Landowner O&A	$ 1,950
SWCDMI-MG14-04	Greater Gallatin Watershed Council	Restoring the Gallatin Valley's Wetland Landscape	$ 2,000
SWCDMI-MG14-05	Madison Conservation District	Madison Stream Team	$ 2,000
Calendar Year 2013 Total			**$ 19,814**

Appendix F—Volunteer Monitoring Lab Analysis Support Grants in 2013

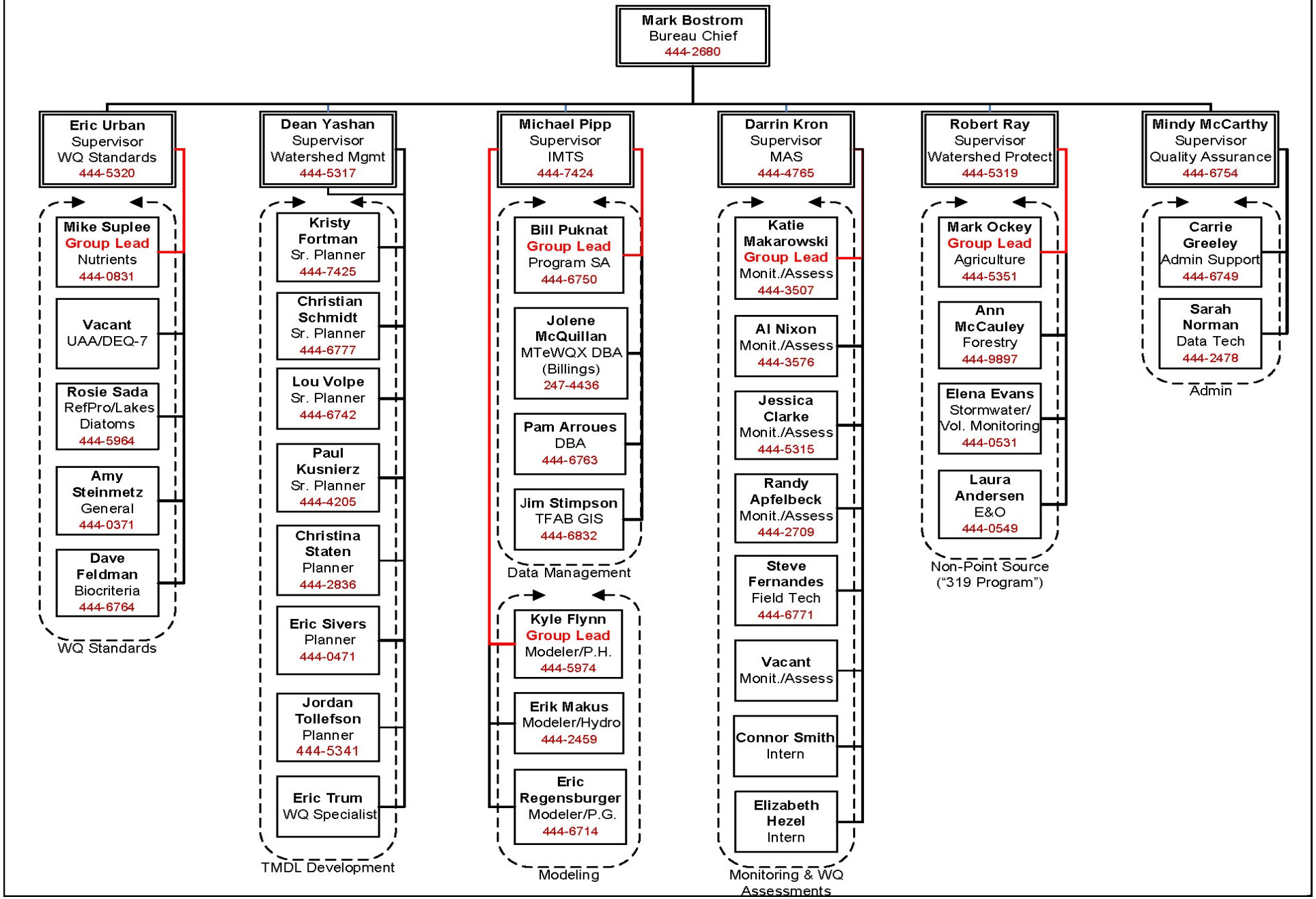
Sponsor	Project	Project Description	Funding Award
Blue Water Task Force	The Blue Water Task Force Community Water Quality Monitoring Program	The Blue Water Task Force (BWTF) Community Water Quality Monitoring Program (CWQMP) is designed to assess water quality issues uncovered by the Upper Gallatin Total Maximum Daily Load (TMDL) assessments (wastewater, road traction sand/salt, and sediment) [MTDEQ, 2010], to monitor for success/failures of future restoration efforts, and to track any trends or episodic events in water quality parameters. At 14 sites, the following parameters are monitored: water temperature, conductivity, turbidity, pH, chloride, total nitrogen, nitrate, total phosphorous, total dissolved solids, sediment size, total coliform, E.coli, and dissolved oxygen. In addition, photo documentation of algae is conducted and macroinvertebrates samples are collected and sent to a lab for analysis.	$1,445
Madison Stream Team	Jack Creek Monitoring Project	Since 2006, the Jack Creek Water Monitoring Project has been engaged in the regular collection of water quality and quantity data on Jack Creek in the Madison Watershed. This stream is designated as impaired, is locally important, and is an area of opportunity due to it's proximity to the town of Ennis. Education events are held regularly, targeting students from age 2-18, and the project has engaged several community members and Madison Stream Team volunteers in regular monitoring events.	$810
Little Bitterroot Lake Association	Little Bitterroot Lake Eutrophication Study	This project involves water quality sampling on Little Bitterroot Lake in northwest Montana to answer questions about seasonal, spatial, and vertical variability of algae and nutrient concentrations and how they are affected by land-use, climatic, and watershed conditions. We propose to sample Little Bitterroot Lake 2 times during 2013, including spatial and depth profile sampling for field parameters, nutrients, and chlorophyll-a during the months of May, and August or September.	$2,620
Madison Stream Team	Madison Stream Team Volunteer Water Monitoring Project, Ennis MT	Since 2010, the Madison Stream Team has been engaged in the regular collection of water quality and quantity data on select streams in the Madison Watershed. These streams are designated as impaired, and include O'Dell, Moore's, North Meadow, South Meadow, Blaine Spring Creek, and the West Fork of the Madison River. Volunteers complete annual training and commit to regular sampling events on their assigned streams.	$2,757
Sun River Watershed Group	Sun River Volunteer Monitoring project; located on Sun River and tributaries	Volunteers will monitor water quality seven times at two sites on the Sun River and at four Sun River tributaries to help track changes that may be occurring from all the projects the watershed effort is accomplishing to improve the health of the Sun River.	$2,226
Teton Watershed Group	Teton River Volunteer Monitoring project; located on Teton River and Tributaries	Volunteers will monitor water quality four times at two sites on the Teton River and at three Teton River tributaries to help track changes that may be occurring from all the projects the watershed effort has accomplished to improve the health of the Teton River.	$2,226
Montana Salinity Control	Laird Creek Headwaters Baseline	Many uncertainties exist surrounding the water quality conditions in Laird and Sage Creeks. These uncertainties are due to the intermittent nature of flow; the lack of water quality data; and the inability to quantify/separate the effect that land use, primarily fallow cropping, has had on shallow ground waters that discharge to Laird Creek from naturally saline geology (Judith River formation). Thus, the identification of "naturally occurring" water quality conditions remains largely undetermined in the Laird/Sage Creek Watershed. This project will work toward characterizing the water quality, as well as documenting current conditions of both surface and ground water in the watershed.	$2,674

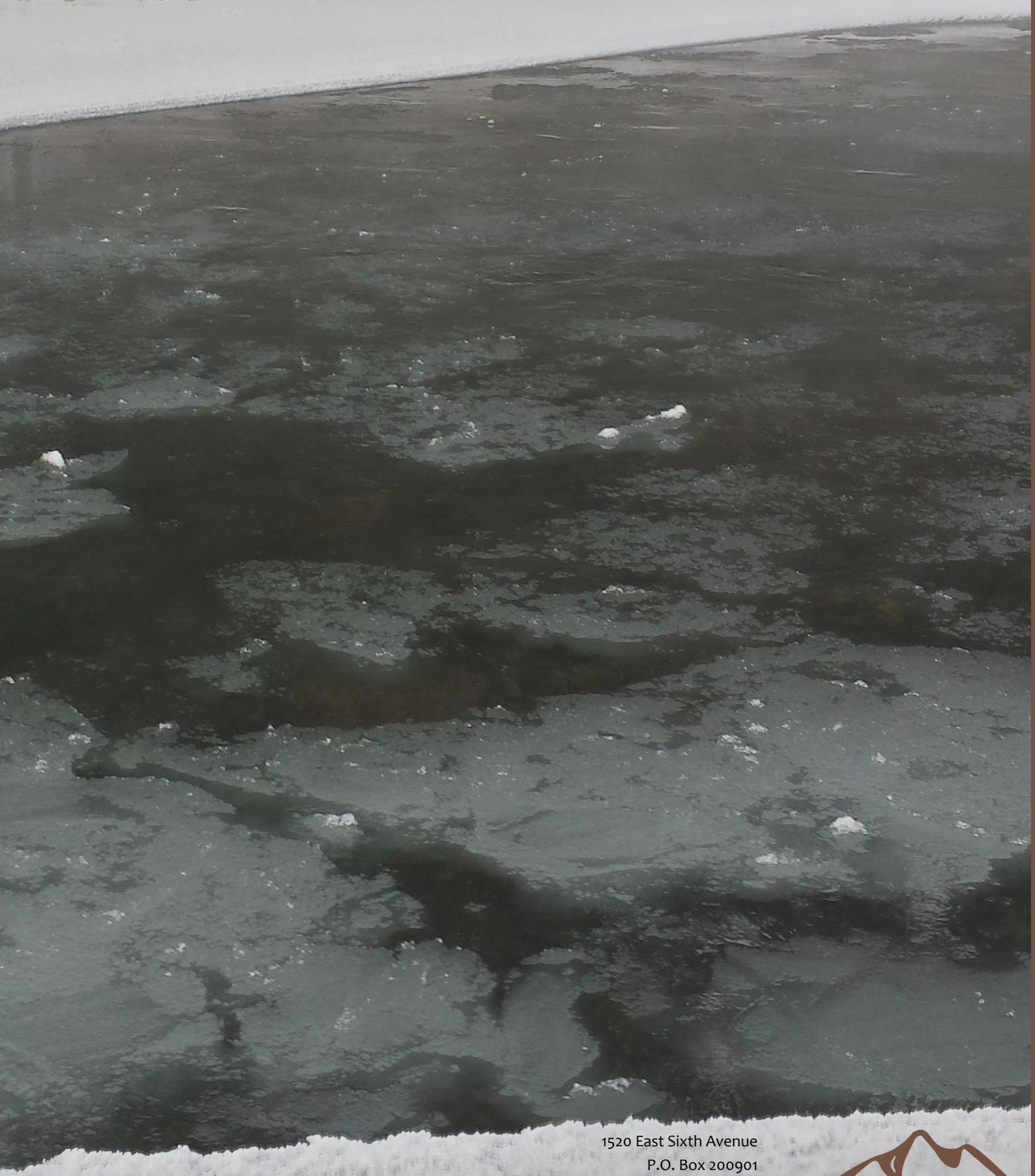
Appendix G—Watershed Restoration Plan (WRP) Status

Watershed/Group Name	Funding	WRP Status
Lolo Watershed Group	2009 TMDL 319 (contract 209075)	ACCEPTED (March 2013).
Lower Clark Fork Watershed Group - Tributary Creeks	2005 319, 604(b) funding, 2009 319	ACCEPTED (October 2010).
Middle-Lower Big Hole/Big Hole Watershed Committee (BHWC)	2010 319 (contract 210109)	ACCEPTED (September 2013).
Ninemile / Trout Unlimited	2011 319 (contract 212059)	ACCEPTED (February 2013).
Shields River/ Park CD	2009 319 (contract 209063)	ACCEPTED (September 2012).
Sun River/ Sun River WG	2009 319 (contract 209065)	ACCEPTED (February 2012).
Swan River/ Swan Ecosystem Center	2007, 2008, 2009 319	ACCEPTED (October 2010).
Teton River/ Teton WG	2009 319 (contract 209062)	ACCEPTED (October 2012).
Upper Big Hole/Big Hole Watershed Committee (BHWC), Upper Big Hole Partnership	2009 319 (contract 209061)	ACCEPTED (December 2012).
Upper Clark Fork/ Watershed Restoration Coalition	2007 TMDL319	ACCEPTED (December 2012).
Upper Gallatin/ Blue Water Task Force	2009 TMDL 319 (contract 209078)	ACCEPTED (September 2012).
Beaverhead Watershed Committee	2010 TMDL 319 (contract 210140)	Under Development. Scheduled to be completed early 2014.
Bitterroot River / Bitter Root Water Forum (BRWF)	2012 319 (contract 212054)	Under Development. Scheduled to be completed by June 30, 2013.
Blackfoot/ Blackfoot Challenge	2012 319 (contract 212055)	Under Development. Reviewed draft “cross walk” document in 2010.
Clearwater River/ Clearwater Resource Council (CRC)	2009 319 (contract 209066)	Not Complete WRP. Preliminary research done. No plans for writing actual WRP yet.
Deep Creek (Broadwater Conservation District)	2013 PO	Under Development. Scheduled to be completed by January 15, 2014.
Flathead Lake/Flathead Lakers	2012 319 (contract 212061)	Not Complete WRP. Completion by summer 2014.
Flint Creek WG	2009 TMDL 319 (contract 209074)	Under Development. Scheduled to be completed by Feb 1, 2014.
Lake Helena Watershed Group	2011 319 (contract 211072)	Under Development. In draft stages.
Lower Gallatin (GGWC)	2013 319 (contract 213025)	Under Development. Scheduled to be complted by December 31, 2014.
Upper Jefferson/ Jefferson River Watershed Council	2010 TMDL 319 (contract 210128)	Final Draft Submitted. In draft form spring 2011.
Big Fork/Flathead County	2009 319 (contract 209064)	NOT ACCEPTED. Completed, however, county unable to address DEQ’s comments on addressing area sources & actions.
Big Spring/ Fergus County CD *and Big Spring Creek Watershed Council (BSCWC)*	2008 319 (contract 208028)	NOT ACCEPTED. Not originally intended to be a complete WRP; final product submitted, does not meet all nine minimum elements.
Ruby River/ Ruby WG	2007 319	NOT ACCEPTED. Draft ompleted in summer2011, does not incorporate 9 elements or DEQ comments. No final submitted.

Appendix H – Water Quality Planning Bureau Organizational Chart

Organization & Staffing of the Water Quality Planning Bureau (12/16/2013)





1520 East Sixth Avenue
P.O. Box 200901
Helena, MT 59620-0901
Phone: 406.444.6697
Fax:406.444.6836
www.deq.mt.gov

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