

Julie DalSoglio, Manager
U.S. EPA
10 W. 15th Street, Suite 3200
Helena, MT 59626

RE: Wetlands Protection Grant CD998117-11 Final Project Report

July 10, 2007

Dear Julie,

Enclosed is the Final Project Report for EPA Wetlands Protection Grant CD998117-11. The Montana Department of Environmental Quality received a 104(b)3 Wetland Protection Development Grant from EPA for \$325,221 as stated in the Wetland Protection Assistance Agreement awarded June 23, 2003. A non-federal match of \$108,407 was required for this grant. This grant provided funding for five Montana wetland program development projects. All projects were completed by the grant end date of September 30, 2006. MDEQ submitted a final Financial Status Report (FSR) to the EPA Montana Office.

Thank you for providing Montana DEQ with Wetland Protection Development funds. I am pleased with the wetland program development that Montana has been able to accomplish with the assistance of this funding. Please contact me at (406) 444-6652 or lsaul@mt.gov if you have any questions about the project activities associated with this grant.

Sincerely,

Lynda A. Saul
Wetland Program Manager

Attachment

c. Joe Meek
Susan McEachern

MDEQ Final Grant Project Report

**EPA Wetland Protection Grant CD 998117-10
Federal Fiscal Year 2003 Grant (06/23/03 – 9/30/06)**

Title: Furthering the Development of a Wetland Monitoring and Assessment Program: Project Leadership and Implementation Wetland Protection in Montana.

Grant Recipient: MDEQ, Wetland Coordinator and Water Quality Standards Section

1520 East Sixth Avenue; Helena, Montana 59620

Contacts: Lynda Saul/Kathleen Kutschenreuter, Wetland Coordinator

Randy Apfelbeck; Water Quality Specialist

406-444-6652; e-mail kkutschenreuter@mt.gov; lsaul@mt.gov

406-444-2709; FAX 406-444-6838; e-mail: rapfelbeck@mt.gov

Funding: Total Project \$ 133,334

EPA Funds \$ 100,000

Match \$ 33,334

Time line: July 1, 2003 – August 31, 2004

Subcontracts include: Interns \$10,000

Project Summary:

Two projects were included 1) Monitoring and Assessment and 2) Protection Implementation.

Monitoring and Assessment

For this project DEQ focused on leading the development of a rapid assessment form (level 2). We reviewed and integrated rapid assessment procedures that were developed by other federal and state agencies. For level 3, DEQ assisted our collaborators to refine the vegetation and bird bioassessment protocols for beaver pond and headwater riverine wetlands and to develop more quantitative measures of the human disturbance gradient. The output included a draft rapid assessment protocol and procedures for quantifying the human disturbance gradient.

Protection Implementation

DEQ provided leadership to the statewide Montana Wetland Council and administered the wetland grant program, which will be used to implement priority conservation and management goals. We achieved these goals in part by seeking out and creating new protection opportunities.

Major Goals:

Monitoring and Assessment

1. Provide leadership to the State Interagency Wetland Monitoring and Assessment Work Group. Coordinate effort to develop a draft rapid assessment form
2. Develop a statewide study design that includes the assessment of wetlands.
3. Provide one intern for DEQ and collaborators to assist in fieldwork.
4. Coordinate the collection of human disturbance data.
5. Host annual Montana wetland monitoring and assessment meeting.

6. Assist collaborators to analyze and compile findings, write reports and provide information to Montana's wetland monitoring website.
7. Develop a statewide map based on landscape assessment protocols.

Protection Implementation:

1. Administer the wetland grant program.
2. Lead the Montana Wetlands Council and revise the wetland clearinghouse web page.
3. Work to improve the effectiveness of compensatory mitigation.
4. Actively seek out opportunities to further wetland protection in the State.

Project Completion Report

Monitoring and Assessment

This project included a rapid assessment meeting (field trip in the Red Rocks Region) July, 2003 to start the development of rapid assessment protocols. Existing rapid assessment literature was reviewed. A Rapid Assessment outline was developed. A draft statewide study design for assessing wetlands in Montana was documented in a water quality monitoring and assessment strategy that was submitted to EPA. DEQ's strategies for developing a program to assess wetlands in Montana were presented at our Annual Wetland Monitoring Workgroup meeting, which was hosted in Missoula in September. We also invited staff from California and North Dakota to discuss their experience using rapid assessment forms and landscape assessment tools. A technical workgroup comprised of professional staff from MDT, FWP, USFWS, USFS, MNHP and Universities met in December to further discuss rapid assessment concepts. Presentations and a discussion on the development and use of rapid assessments protocols and DEQ's strategy for assessing wetlands in Montana were presented at the Wetland Council in January 2004. The MNHP assisted DEQ in the development of a draft rapid assessment form in February 2004. The form was distributed to the technical committee in March for review and revised in April.

In March a coordination plan was developed for the 2004 field season for all 104(b) funded wetland monitoring and assessment activities occurring in the Red Rock Region. Two interns were hired to test the rapid assessment form at the same locations that the bird and vegetation (level 3) assessments were being conducted. DEQ agreed to also test the MDT wetland assessment form and the NRCS riparian assessment form at the same locations to determine how these assessment protocols compared and if they could be combined. In April a sampling and analysis plan was written for the 2004 field season for testing the rapid assessment forms. In May both MDT and NRCS helped train our interns on how to use their forms. We also worked with our MNHP and UM collaborators to train our interns and to evaluate the DEQ rapid assessment form in the field. Additional revisions were made. The interns tested all of the forms at approximately 30 riverine wetlands and 20 beaver ponds during the field season (June-August). Montana Watercourse and EPA staff spent 2 days in the field with MDEQ interns in August to further evaluate how the rapid assessment forms were working. A GIS landscape map (model) was only developed for western Montana since 6th level HUCs were not yet delineated for Eastern Montana. The collection of water quality samples was not needed due to drought. The QAPP was not updated, however a coordination plan and sampling and analysis plan was written and provided to EPA.

Protection Implementation

The MDEQ Wetland Coordinator conducted the first 7 months of this project. The remaining 5 months were conducted by an EPA Headquarters Wetland Division staff person who relocated to MDEQ for an Interpersonal Agreement (IPA) assignment. This IPA assignment was intended to bring a western state wetland prospective to EPA Headquarters and for an EPA HQ staff to become familiar with wetland issues associated with a non-regulatory western state.

MDEQ Wetland Coordinator held Wetland Council meetings in October and January. The October 30 Council meeting focused on statewide wetland mapping and included additional meetings with Iowa statewide wetland mapping coordinator Todd Bishop and the Montana GIS and mapping community. The Council agreed to the need to proactively look beyond NWI for wetland identification. Ultimately a new project was initiated to pull together all entities interested in aerial imagery work to create a public domain map that would be of value to wetland mapping interests as well as other users in Montana. The January 20 Council meeting focused on understanding the exiting wetland and riparian monitoring and assessment methods and a panel discussion on how existing methods can contribute to the State wetland assessment program needs. As a member of the Montana Wetlands Legacy, worked on developing an In Lieu Fee for wetland mitigation with the COE and worked with management to include MDEQ as a signatory to the agreement.

The EPA IPA Wetland Coordinator at MDEQ held a Wetland Council meeting May 26 in Helena including discussions on revising the Wetland Clearinghouse. She participated in Montana Wetland Legacy meetings and field trips, MDEQ wetland monitoring and assessment meetings and field trips and assisted with the new Ponds Guidebook. The MDEQ wetland grant program submitted six new projects for funding. The proposals were mainly to further EPA goals of developing state wetland monitoring and assessment programs.

2) Title: **Developing a Wetland Monitoring and Assessment Program: Vegetation Metrics for Riverine Wetland in the Red Rocks Watershed and Floristic Quality Assessment Index for Western Montana Wetlands.**

MDEQ Contract Number: 203097-4

Agency: **Montana Natural Heritage Program (MNHP)**

Montana State Library; 1515 East Sixth Avenue; Helena, Montana 59620

Contact: Marc Jones, Vegetation Ecologist/Greg Kudray, Senior Ecologist
406- 444-0915; FAX 406-444-0581; e-mail: gtkudray@mt.gov

Funding: Total Project \$ 53,500
EPA Funds \$ 40,900
Match \$ 13,600

Time line: June 30, 2003 – December 31, 2004 (extended to September 30, 2005.)

Contract Modifications

#1 amended Task 1 to accommodate reconnaissance investigations to locate additional sites in the Red Rocks HUC. 15 sites will be site-specific field assessed and 5 additional sites will be located.

#2 added \$8,700 of EPA funds from FFY 2004 grant DEQ contract #205003 Task 1 for new Task 6, to collect vegetation and environmental data from 30 riverine wetland in southwestern Montana.

#3 extended the completion date from December 31, 2004 to September 30, 2005.

#4 subtracted \$8,700 of EPA funds from this grant for Task 3a, host and coordinate an expert panel to assign coefficients of conservatism to the wetland flora of western Montana, and move this Task and funds to FFY 2004 grant DEQ contract #205003 for a new Task 14.

Project Narrative

The Montana Natural Heritage Program will evaluate riverine wetland in the Red Rock watershed across a human disturbance gradient. Based on analysis of field data, the Heritage program will develop multiple vegetation metrics that are sensitive to human disturbance. The Heritage Program will also develop a floristic quality assessment index for the wetland flora of western Montana. Both these products will allow the state to determine the presence and extent of aquatic life use impairment in individual wetland and will enable the state to better protect and restore Montana's wetland resources. The goal of this project is to develop: 1) level 3 bioassessment metrics for riverine wetland vegetation and, 2) a floristic quality assessment index for western Montana wetlands.

Project Completion Report

The amended Task #1 from Modification #1 was completed. This involved collecting vegetation and environmental data for 15 riverine wetlands in the Red Rock watershed and completed reconnaissance of 5 possible riverine sites outside the Red Rock watershed. Electronic data was submitted to DEQ. Another field-based task, Task #6 from Modification #4, to field inventory at least 30 riverine wetlands including data on floristic composition and abundance, vegetation structure, geomorphology, and human disturbance was completed.

A final report titled "A vegetation index of biotic integrity for small-order streams in southwest Montana and a floristic quality assessment for western Montana wetlands" was completed, copy delivered to DEQ Wetland Program and posted on MT NHP website www.mtnhp.org. It summarizes the development and analysis of these metrics and their scoring of the wetland inventoried. Eight of 27 metrics were selected for inclusion in the multimetric vegetation index of biotic integrity.

The report also includes the FQAI, vegetation metrics, associated background, methods, and discussion. The EPA biological assessment of wetlands work group is no longer functioning but these results were highlighted in the next Heritage newsletter and incorporated in a new printing of a "Field Guide to Montana's Wetland Vascular Plants". Datasets from Toby Spribille and the Idaho Conservation Data Center were obtained and used to develop the FQAI. The wetland plot data from fieldwork was entered into the Heritage Program Plots database.

3) Title: **Outreach Education for Wetlands Protection in Montana.**
MDEQ Contract Number: 203098-1
Agency: **Montana Watercourse**
201 Culbertson Hall; P.O. Box 170575; Bozeman, Montana 59717-0575
Contact: Karen Filipovich, Director, Montana Watercourse; 406-994-1910
Funding: Total Project \$ 73,560
EPA Funds \$ 58,848
Match \$ 14,712
Time line: June 27, 2003 – June 30, 2005. (Extended to December 31, 2005)

Contract Modification

#1 amended to extend completion date to December 31, 2005.

Project Narrative

Specific wetland education and outreach will be developed and conducted to address some of Montana's most pressing wetland information needs:

- 1) Develop, write, print and distribute a booklet on artificial ponds.
- 2) Eight presentations for local government planners, planning board members, commissioners and interested citizens using *A Planning Guide to Montana's Wetland and Riparian Areas* and Lake County and Flathead County outreach.
- 3) Five meetings with educational decision-makers, plan for revising wetland curriculum to increase effectiveness and relevance to educators.
- 4) Scheduling, planning and coordination, promotion and evaluation of four WET/WOW workshops for educators, incorporating materials and innovative approaches as indicated.
- 5) Promote wetland education and Wetlands education statewide at teacher conferences and conventions (MEA-MFT, MEEA, PIR days) and through educational publications and networks through 4 presentations, 3 articles, web-networking.
- 6) Facilitate planning, promotion, coordination, and implementation of five Community and School Water/Wetlands Festivals by providing monetary and technical support.
- 7) Develop, administer, and evaluate a survey designed to understand differences between awareness of wetland and water resources between populations who have and have not received wetland and water education.

Project Completion Report

In summary, the Montana Watercourse successfully developed and distributed nearly 5,000 copies of a *Guidebook to Montana Ponds*. This guidebook, aimed at developers, property owners, real estate agents, and community members provides an important resource for communicating pond best management practices and the consequences of poorly developed ponds. The need for these booklets was so great that a reprint has already occurred.

Montana's local governments are adjusting to an increase in development that often occurs in or near valuable wetland and riparian resources. The Planning Guide for Protecting Montana's Wetlands and Riparian Areas provides county planners, local officials, and others involved with protecting wetlands a valuable resource for options for conserving these areas. The Montana Watercourse reached more than 160 people who

attended eight presentations that were delivered in eight counties at local commissioner meetings, workshops, and other county or planning board meetings.

The Montana Watercourse kept current on recent advances in science curriculum for Montana Schools and continues to make professional contacts to ensure programs provide teachers with relevant information and resources. Scientifically-based, experiential, activities that are correlated to state standards, as well as ideas for teachers instructing on wetland and water resources were provided for over 40 teachers in WET/WOW workshops. The Montana Watercourse also participated and conducted exhibits and presentations at MEA, MEEA, and school festivals that reached over 700 students in order to promote wetland education throughout the state of Montana.

A full project completion report based on tasks and accomplishments is attached.
G:\TFA\!SWP_Section\!WETLANDS\2003 EPA grant\Watercourse\Watercourse Final Project Completion Report.doc

4) Title: **Wetlands Teacher Education Program and Stewardship in the Clark Fork Watershed**
MDEQ Contract Number: 203099-1
Agency: **Watershed Education Network**
The Swift Building; 315 South 4th East; Suite 203
Missoula MT 59801
Contact: Debbie Fassnacht, Executive Director,
406-541-9287
Funding: Total Project \$ 40,260
EPA Funds \$ 25,660
Match \$ 14,600
Time line: June 27, 2003 – June 30, 2005. (Extended to June 30, 2006).

Contract Modification

#1 amended to extend completion date to June 30, 2006.

Project Narrative

Wetland education and stewardship will be developed and piloted in the Clark Fork Watershed with the following specific activities:

- 1) Conduct two wetland teacher workshops and provide each teacher with substitute stipends, field kits, and wetland curriculum as well as a list of resource experts to contact.
- 2) WEN will provide wetland workshop participants with a curriculum planning day to develop their schools wetland education program and to network/share teaching strategies.
- 3) Organize and lead eight teachers to will pilot the *Wetlands Trunk* in their classroom
- 4) Conduct one local wetland field trip each year with resource experts.
- 5) Coordinate and supervise the creation of detailed local *Wetland Field Guide* books. Print 500 *Wetland Field Guides* to provide 20 teachers with classroom sets.

- 6) Attend a minimum of six wetland planning meetings each year, provide leadership, guidance and expertise to local government urban wetland decisions and provide recommendations for local wetland decisions.
- 7) Attend at least one wetland advanced training each year.
- 8) Provide field trip fee for up to 20 classes to attend MNHC Wetlands Ecology field trips.
- 9) Provide support for the production of 50 additional Wetland Videos for distribution locally and throughout the State.

Project Completion Report

The task and deliverables were successfully completed as follows:

Task 1: Wetlands Teacher Workshops

1. Summer Teacher Wetland Workshop: May 11 and 12, 2004
2. Summer Teacher Wetland Workshop: July 19th and 20th, 2005

Both wetland teacher workshops were completed with 16 teachers attending.

Task 2: Teacher Wetlands Curriculum Planning Day

Frenchtown Teachers Curriculum planning workshop, May 9, 2006, 4-7 pm.

Teachers were provided with: The Wetland Teaching Trunk, Project WOW (Wonders of Wetlands), and additional wetland teaching resources. The Frenchtown teachers planned a strand for the entire school to study wetland topics, brainstormed appropriate grade levels for key concepts and made a commitment to use of the slough adjacent to Frenchtown Elementary as an outdoor classroom.

Task 3: Evaluate and Modify Wetlands Trunk

Frenchtown teachers and Missoula County Public School teachers made recommendations for Wetland trunk improvements:

Age appropriate wetland “critter” cards, wetland trunk contents revised for individual grade level activities for enjoyment by a more students.

Daleene Norman, Frenchtown Teacher complied the revisions for the Wetlands Trunk

Task 4: Local Field Trips

One local field trip each year (2 total) for classroom teachers

1. Wetland Tour: RiverFest community event with Montana Natural History Center, Sept. 2005
2. June 10, 2006: Lee Metcalf Wildlife Refuge Nature and Birding Festival.
3. June 14, 2006: Blackfoot Challenge Teacher Workshop wetland tour with Wendy Ridenour.

15 teachers from the Blackfoot valley attended an afternoon wetland workshop featuring wetland plant communities, plant identification, aquatic invertebrates common to wetlands, and a wetland ecology discussion.

Task 5: Local Wetlands Guide

The task output: develop and print Wetland Field Guides to provide 20 teachers with classroom sets. We have made the determination that a classroom set is 6 field guides

since the cost of printing the 60 page, full color Wetland Field Guides is high, due to the decision to go with full color for maximum quality.

Task 6: Local Government Wetland Participation

Attend a minimum of six wetland planning meetings

Outputs: McCormick Park Advisory meetings (attended 4 meetings), Bancroft Pond neighborhood meetings (attended 3 meetings), Missoula Conservation District monthly meetings (attended 5 meetings), Missoula Water Quality District (attended 8 meetings), Bitterroot Water Forum (attended 2 meetings), Montana Watercourse Realtor Training (attended one meeting), Western Regional Wetland conference (attended fall 2005), Clark Fork Technical Advisory Committee (attended 4 meetings)

Task 7: Professional Development

This task was eliminated. Funds were not spent by the Watershed Education Network and instead used by DEQ Wetland Program to provide scholarship support of registration costs for natural resource professionals to attend wetland trainings.

Task 8: Naturalist in the Schools support

The Naturalist in the Schools program did not offer wetlands education as a part of the class topics in 2005-06. The Watershed Education Network was invited to develop and lead a Wetland Discovery Day at the Montana Natural History Center for the Saturday Discovery Days. The Wetlands Discovery Day was held on April 22, 2006 in conjunction with Earth Day activities in Missoula. Several families attended the MNHC Discovery Days and enjoyed the Wetland DVD, *Refuge: Urban Wetlands of Missoula* and wetland aquatic insect samples and artwork.

Task 9: Wetland video support

Reproduction costs were more than anticipated, so 30 Additional DVD's of *Refuge: Urban Wetlands of Missoula* produced by MCAT filmmaker, Ron Scholl, were made and distributed.

5) Title: **Assessing the Biological Integrity of Wetlands in Montana using Bird Communities.**

MDEQ Contract Number: 203100-1

Agency: **Avian Science Center, University of Montana**

University of Montana

Missoula, MT 59812

Contact: Anna Noson, Research Specialist

406-243-2035

Funding: Total Project \$ 133,084

EPA Funds \$ 99,813

Match \$ 33,271

Time line: June 30, 2003 – June 30, 2005. (Extended to September 30, 2005).

Contract Modification

#1 amended to extend completion date to September 30, 2005.

Project Narrative

Survey wetland bird populations at preselected riverine and depressional wetlands in the Middle Milk watershed, and riverine and slope wetlands in the Red Rock watershed. These sites have been selected by the Montana Interagency Wetland Monitoring and Assessment Work Group to represent a human disturbance gradient, and they will be collecting data on vegetation, water quality, and other environmental variables. Analyze these data in relation to our bird survey data and will develop metrics for wetland bird communities that are sensitive to human disturbance. Specific tasks include:

- 1) Develop Quality Assurance Project Plan (QAPP) section for bird assessment, 2003 field season planning, hiring and training.
- 2) Develop bird survey and habitat assessment methods, conduct bird and habitat surveys for at least 10 Red Rocks and 20 Middle Milk sites.
- 3) Select sites in Red Rocks HUC and collect baseline information on riverine sites in Red Rocks and depressional sites in the Middle Milk watershed.
- 4) Preliminary analyses of data to inform strategy for the second field season.
- 5) Develop potential metrics for IBI with 2003 data
- 6) 2004 field season planning, hiring and training
- 7) Survey all established sites in second field season (2004)
- 8) Test volunteer rapid assessment methods.
- 9) Develop metrics for assessment of biological integrity
- 10) Integrate our data with the DEQ wetland monitoring program
- 11) Coordinate with the Montana Interagency Wetland Monitoring and Assessment Work Group and prepare final project report.

Project Completion Report

All tasks were completed as follows, more detailed reports and datasets are available from DEQ.

- 1) QAPP for bird assessments including field forms were provided and a technical assistant was hired and trained.
- 2) Data forms were developed and Excel files submitted for the bird survey work performed.
- 3) First year data collection from Middle Milk indicated that depressional sites were too dry in most years to support many wetland-associated bird species. Likewise, riverine sites in the Middle Milk were in such poor condition with eroded banks and little vegetation and also did not support appropriate wetland-associated bird numbers. Because of the little variation, bird assemblages were deemed unlikely to be an appropriate assessment for these wetland types (from Task 4 progress). Beaver-created wetlands were selected as a second wetland type in the Red Rock as an alternative. Sites were selected and baseline information was collected for riverine and beaver-created wetlands in the Red Rocks HUC.
- 4) Data during the first year of field work was analyzed and submitted. Recommendations for modifying sampling procedures and data analysis were supplied.
- 5) Focused preliminary analysis on landscape scale measures since disturbance gradient sampling and vegetation sampling information was not complete. Evaluated impacts from

grazing intensity and assessment of road density. Early indications are that a high percentage of bird species had sufficient data for sensitivity to at least one measure of human disturbance at both the local and landscape scales. This indicates that bird assemblages are likely to be a useful tool for assessing headwater riverine wetlands in Montana valleys and foothills ecoregions.

6) Two technicians with previous songbird experience in Rocky Mountains were hired and attended weeklong training. Site access was sought.

7) Bird surveys were conducted at selected small-order riverine and lotic beaver-influenced wetland in the Red Rocks watershed. Sites were surveyed twice. Habitat measures meaningful for birds were sampled at all sites. Data forms were revised and used for 2004 field season. Electronic database containing bird survey and habitat data were submitted to DEQ.

8) Volunteer bird survey methods were developed and documented. Eleven volunteers participated in the surveys in 2005, self evaluation of bird identification skills varied widely. Overall conclusions and recommendations indicated high project involvement and enthusiasm by volunteers, however the pool of volunteers is small and researchers predict that finding more volunteers with advanced birding skills may be difficult.

9 and 11) A hard copy report titled "Using Bird Indices of Biotic Integrity to Assess the Condition of Wetlands in Montana" 51pp was submitted in fulfillment of task 9 and 11. It documents the evaluation of birds as indicators of wetland condition, and the development of bioassessment tools for headwater riparian areas in southwestern Montana based on songbird communities. Bird survey methods were tested and refined in 2003 and bird data collected in 2004 were used to develop multimetric biological index for headwater streams and associated wetlands.

10) Survey data was converted to the necessary formats and sent to DEQ to be added to the wetland monitoring program database and sent to NRIS. The Avian Science Center's bird database is being converted to become available online in 2006 as an interactive website and this information will be stored there as well.