

Colorado



Colorado Department
of Public Health
and Environment

Nonpoint Source Program

FY 2008 Annual Report

Water Quality Control Division Colorado Department of Public Health and Environment



Rio Grande Streambank Stabilization

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I -- Introduction

This report fulfills the requirements of Section 319(m)(1) of the federal Clean Water Act of 1987. The Colorado Department of Public Health and Environment's Water Quality Control Division annually prepares this report to inform the public, the U.S. Congress and the U.S. Environmental Protection Agency (EPA) on the state's progress in the area of nonpoint source water pollution abatement. Although this report should not be considered a complete enumeration of all nonpoint source activities, it describes the most important features of Colorado's nonpoint source program.

The twofold goal of Colorado's nonpoint source program is to *restore* to full designated use those waters impaired by nonpoint sources of pollution and to *protect* existing water quality from future impairments by using an open process that fully involves the public.

Through Fiscal Year 2008, the division continued to administer the *Colorado Nonpoint Source Management Program*, which EPA approved in January 2000. The Colorado Water Quality Control Commission adopted the Supplement to the Colorado Nonpoint Source Management Program in January 2005. The document is available upon request or online at: <http://www.npscolorado.com/2005MgtProgFinal.pdf>. In addition, Regulation № 93 – Section 303(d) List of Water Quality Limited Segments Requiring TMDLs and the *2006 Status of Water Quality in Colorado* 305(b) report were also used for program implementation activities. Nonpoint source assessment is integrated in the Water Quality Status 305(b) report and is periodically updated.

Any comments or questions on this report or on Colorado's nonpoint source program may be directed via e-mail to nps@state.co.us.

II -- Grant Management and Program Administration

During FFY2008, Colorado NPS program received \$1,868,100 in federal section 319(h) grant funds, under US EPA Grant # C9-99818608. Colorado continues to award the federal funds to local sponsors, which can be local government entities, watershed groups and others. Federal funds are used at the local level to implement projects that address water quality impairments, to develop watershed-based plans and for education and dissemination of information related to nonpoint sources of pollution.

In addition to the 2008 funds, Colorado continues to manage six other annual grant awards, which have been expended to a varied degree. The following table summarizes grant awards per year and the approximate percentage that has already been expended in each grant.

Current Section 319(h) Nonpoint Source Funding		
Federal Fiscal Year	Grant Award	Percent Expended
FFY02	\$2,382,200	93.51%
FFY03	\$2,369,400	91.25%
FFY04	\$2,339,700	83.80%
FFY05	\$1,962,700	62.65%

FFY06	\$1,929,334	19.54%
FFY07	\$2,182,827	0.15%
FFY08	\$1,868,100	0.58%

1) Staffing and Support

Funding for staffing and support is administered through the annual Performance Partnership Agreement and Grant. The 2008 staffing and support grant is \$575,000, which funds 4.5 full-time equivalents (FTEs). These FTEs include one full-time NPS coordinator, four three-quarter FTE NPS project coordinators. The remaining 0.5 FTE represents additional support from other units, such as contracting and fiscal.

2) Milestones: Colorado continues to improve and enhance grant management processes

- Colorado continues to close out older “legacy” grants: FFY98, FFY99, FFY00, FFY01 are fiscally closed, but not all the associated grant administration information has been entered in GRTS. In terms of finalizing these grants administratively, FFY98 is 90% complete, waiting for a few final reports; FFY99 and FFY2000 were fully closed in FFY2008, including GRTS updates; and FFY01 is approximately 50% complete.
- Colorado has updated most of the information for the active projects in the federal Grants Reporting and Tracking database, although not yet entirely complete. Although continuing to enter load reduction data in GRTS as they are reported by project sponsors, in 2008, Colorado identified the need to develop a process and protocols to better gather sediment and nutrient load reduction information and established a Load Reduction Task Force to address that need. Colorado anticipates having that resolved for the next reporting cycle.
- Colorado anticipates fully closing the outstanding “legacy” grants (FFY98 and FFY01) and three older federal grants during calendar year 2009: FFY02, FFY03 and FFY04. Once this is accomplished, Colorado will be managing the federal grants in five year-increments, closing out one older grant and starting a new one every year, following EPA Nonpoint Source Program guidance.
- Colorado established a new process to track and manage currently active grants. Information is being kept current for all project expenditure totals, accumulating match amounts, progress reports, and other project management detail. This process also allows federal grant expenditure and match accrual totals to be updated frequently.
- Colorado submitted the draft Success Story Report: Box Canyon Creek Watershed Restoration Project, in September of 2008. In addition, EPA requires reports on the overall success of the Clean Water Act Programs on a watershed basis, captured at the 12-digit Hydrologic Unit Code level. CDPHE anticipates fulfilling this reporting requirement as well.

- The NPS program team held a half-day workshop to disseminate information regarding NPS funding application process. The workshop agenda focused on the RFP process and “business-ready” considerations for potential applicants.
- Colorado revised the Request for Proposals process for FFY08 to improve the quality of information received and to make the process available electronically. The RFP process for 2008 generated 17 proposals which totaled more than \$2.7 million requested. Individual proposals ranged in value from \$32,000 to \$425,000. Twelve new projects were approved for funding.
- The NPS program team prepared and executed 16 FY06, FFY07 and FFY08 NPS project implementation plans, contract agreements and other supporting documentation. Detail about these projects can be found below.
- The NPS program also held a day long planning retreat with EPA Region 8 personnel and staff from the WQCD’s TMDL and SWAP programs. The retreat addressed integration of each program’s respective goals to achieve more comprehensive restoration of impaired waters and more effective planning.
- Colorado also continues to engage other state and federal agencies and the public on nonpoint source pollution issues through the Nonpoint Source Alliance (Alliance). The Alliance is a diverse group of stakeholders that provide volunteer support to the NPS program by assisting with education and outreach, mentoring prospective project proponents, and providing technical expertise from their respective fields.
- Colorado continues to improve NPS contract close-out practices. During FFY08, the NPS team closed out 10 projects from the FFY02 through FFY06 grants. In addition, project closing instructions and expectations, such as final invoice, match reconciliation and final reports, are being communicated more clearly and systematically to project sponsors. The following table contains the information about projects closed-out during FFY08:

NPS Projects ended in FFY 2008					
Project Title	Project Sponsor	Total NPS Award	Total NPS Expenditures	% spent	Date closed
Animas Segment 3a Characterization (FFY03)	San Juan Resource Conservation & Development Council	\$174,950	\$50,484.93	29	09/30/08
Blue River Restoration at Fourmile Bridge (FFY02)	Summit County	\$227,400	\$227,400	100	06/30/08

Coal Creek Watershed Water Quality Monitoring (FFY05)	Town of Crested Butte	\$45,693	\$45,693	100	06/30/08
Drip Irrigation as a Method of Reducing the Movement of Pollutants in the Patterson Hollow Watershed (FFY04)	Southeast Colorado RC&D	\$ 59,900	\$ 59,900	100	01/30/08
Interstate I-70 / Vail Pass Sediment Control (FFY02 and 03)	Eagle River Water and Sanitation District	\$150,000	\$150,000	100	06/30/08
Lower Arkansas Basin Watershed Plan (FFY06)	Southeast Colorado RC&D	\$ 25,000	\$ 25,000	100	06/18/08
Lower Gunnison TMDL Study (FFY02)	United States Geological Survey	\$65,000	\$65,000	100	03/31/08
North Fork of Republican River Watershed Project (FFY03)	Yuma County Conservation District	\$ 24,000	\$ 24,000	100	07/17/08
Roaring Fork Watershed Plan (FFY03)	Roaring Fork Conservancy Roaring Fork Watershed Collaborative	\$ 25,000	\$ 25,000	100	09/07/08
Working so the Next Generation Understands NPS Pollution - Colorado Readers (FFY03)	Colorado Foundation for Agriculture	\$ 108,500	\$ 108,500	100	10/05/07

3) Summary of Colorado NPS projects active during FFY08:

Project Title	Project Sponsor	Watershed	Project Type	NPS Award
Lower Animas Watershed Plan (FFY04 and 07)	San Juan Resource Conservation and Development Council	Animas River Basin	Watershed Plan	\$25,000

Barr-Milton Watershed Plan (FFY05)	Barr Lake and Milton Reservoir Watershed Association	South Platte River Basin	Watershed Plan	\$301,900
Big Thompson Watershed Management Plan (FFY04)	Big Thompson Watershed Forum	South Platte River Basin	Watershed Plan	\$25,000
Coal Creek Watershed Plan Implementation (FFY 06 and 07)	Town of Crested Butte	Gunnison River Basin	Watershed Plan	\$141,296
Dolores River Watershed Plan (FFY07)	Dolores Water Conservancy District	Colorado River Basin	Watershed Plan	\$26,750
Lower Gunnison River Watershed Plan (FFY03 and 06)	Colorado River Water Conservation District	Gunnison River Basin	Watershed Plan	\$32,479
Lake Fork Watershed Plan (FFY06)	Colorado Mountain College	Upper Arkansas River Basin	Watershed Plan	\$25,000
Mancos River Watershed Plan (FFY06)	Mancos Conservation District	San Juan River Basin	Watershed Plan	\$35,000
Palmetto Gulch TMDL Development (FFY02 and 03)	Division of Reclamation, Mining and Safety	Gunnison River Basin	Watershed Plan	\$39,776
Roaring Fork Watershed Plan (FFY06)	Roaring Fork Conservancy Roaring Fork Watershed Collaborative	Gunnison River Basin	Watershed Plan	\$25,000
Snake River Watershed Plan (FFY06)	Blue River Watershed Group	Colorado River Basin	Watershed Plan	\$25,000
Uncompahgre Basin Watershed Plan (FFY08)	Shavano Conservation District	Gunnison River Basin	Watershed Plan	\$49,500
Willow Creek Watershed Plan (FFY04)	SLV RC&D (fiscal agent)	Rio Grande Basin	Watershed Plan	\$25,000
AWARE Colorado (FFY06)	League of Women Voters of Colorado	Statewide	Information Dissemination	\$182,250
Colorado Silviculture BMPs Evaluation (FFY07)	Colorado State University	Statewide	Information Dissemination	\$33,605

Data Sharing Network (FFY07)	South Platte CURE	Statewide	Information Dissemination	\$72,354
NPS Connection Newsletter (FFY08)	League of Women Voters of Colorado	Statewide	Information Dissemination	\$32,000
NPS Educational Outreach – Middle & High Schools (FFY04)	Colorado Foundation for Agriculture	Statewide	Information Dissemination	\$142,250
Outreach Coordinator (FFY06)	Colorado State University	Statewide	Information Dissemination	\$168,148
Statewide Public Outreach / Survey (FFY05)	Colorado Foundation for Agriculture	Statewide	Information Dissemination	\$155,000
Understanding Polluted Runoff (FFY06)	Colorado Foundation for Agriculture	Statewide	Information Dissemination	\$83,500
Assessing Irrigation – Induced Selenium and Iron in the Stream-Aquifer System of the Lower Arkansas River Basin (FFY04)	Colorado State University	Arkansas River Basin	Assessment	\$286,895
Evaluation of the Impact of Best Management Practices on Ground Water and River Water quality in Irrigated Valley (FFY03)	Colorado State University	Arkansas River Basin	Assessment	\$100,000
Field-Scale Assessment of Improved Irrigation Practice Impacts on Drainage Water Dissolved Chemical Constituents and Receiving Stream Salt-Loading Vulnerability (FFY03)	Southeast Colorado RC&D	Arkansas River Basin	Assessment	\$91,708
Lake Fork Mitigation and Monitoring (FFY03)	Colorado Mountain College	Upper Arkansas River Basin	Assessment	\$15,385

CCA Best Management Practices Implementation Program (FFY06)	Colorado Cattlemen's Association	Statewide	Agriculture BMPs	\$150,000
CLA Animal Feeding Operation Project (FFY04 and 06)	Colorado Livestock Association	Statewide	Agriculture BMPs	\$239,488
Selenium Control: Loutzenhizer Lateral Piping (FFY02,03,04 and 07)	Uncompahgre Valley Water Users Association	Gunnison River Basin	Agriculture BMPs	\$800,000
Anglo-Saxon Porcupine Assessment (FFY05)	Anglo-Saxon Properties Ltd	San Juan River Basin	Abandoned Mine Reclamation BMPs	\$14,023
Priority Mine Site Waste Removal (FFY03)	San Juan Resource Conservation and Development Council	San Juan River Basin	Abandoned Mine Reclamation BMPs	\$163,500
Post Remediation Assessment (FFY03 and 04)	San Juan Resource Conservation and Development Council	San Juan River Basin	Abandoned Mine Reclamation BMPs	\$74,308
Upper Animas Mine Drainage Control (FFY06)	San Juan Resource Conservation & Development Council	San Juan River Basin	Abandoned Mine Reclamation BMPs	\$187,440
Upper Animas Mine Waste Control (FFY04)	San Juan Resource Conservation & Development Council	San Juan River Basin	Abandoned Mine Reclamation BMPs	\$142,650
Dinero Tunnel Bulkhead (FFY07)	Division of Reclamation, Mining and Safety	Upper Arkansas River Basin	Abandoned Mine Reclamation BMPs	\$96,000
Gilson Gulch Orphan Mine Remediation (FFY06)	Division of Reclamation, Mining & Safety	Clear Creek	Abandoned Mine Reclamation BMPs	\$255,000
Technical Assistance (FFY04)	Division of Reclamation, Mining and Safety	Statewide	Abandoned Mine Reclamation BMPs	\$150,000
Willow Creek 5 Mines (FFY03)	SLV RC&D	Rio Grande Basin	Abandoned Mine Reclamation BMPs	\$61,074

Willow Creek Nelson Tunnel (FFY05)	SLV RC&D	Rio Grande Basin	Abandoned Mine Reclamation BMPs	\$197,723
Coyote Gulch (FFY06)	City of Lakewood	South Platte River Basin	Stream Restoration BMPs	\$200,000
Lefthand OHV Area Restoration I (FFY03 and 05)	James Creek Watershed Initiative	South Platte River Basin	Stream Restoration BMPs	\$156,000
Owl Mountain/North Platte Project (FFY04)	CO Wildlife Heritage Foundation/Owl Mt. Partnership	North Platte River Basin	Stream Restoration BMPs	\$146,000
Rio Grande Stream Stabilization II (FFY02)	San Luis Valley WCD	Rio Grande Basin	Stream Restoration BMPs	\$150,000
Town of Alma (FFY03)	Town of Alma	South Platte River Basin	Urban / Stormwater BMPs	\$175,000
City of Aspen Stormwater Treatment System (FFY05)	City of Aspen	Colorado River Basin	Urban / Stormwater BMPs	\$150,000



Dinero Mine Waste piles above the Sugarloaf wetland prior to their relocation

View of mitigated mine waste footprints and retention ponds at Dinero



4) Watershed-based Plans Summary:

Watershed plans being developed or already developed	Watershed plans being implemented
Lower Arkansas River	Animas River above Silverton
Bear Creek	Barr-Milton Watershed Plan
Big Thompson River, Rocky Mountain National Park to Home Supply Canal	Black Gore Creek, Upper Colorado River Basin
Grand Valley Tributaries	Cherry Creek, South Platte River Basin
Lefthand Creek, including James Creek and Little James Creek	Clear Creek, above the mouth of the canyon
North Fork of the Republican River	Coal Creek and tributaries
Slate River	Eagle River, Upper Colorado River
Snake River	Fountain Creek
Lower South Platte	Lake Fork of the Gunnison, Palmetto Gulch
	North Fork of the Gunnison
	Straight Creek, Upper Colorado River Basin
	Upper Rio Grande to Alamosa County line
	Upper South Platte River
	Willow Creek

e) The following table summarizes the project proposals approved for funding during the FFY08 RFP process:

The process for 2008 Nonpoint Source project funding officially started on October 12th 2007 with the release of the RFP announcement letter with the proposal priorities and guidance. Deadline for proposals submittal was January 11th 2008, at which time the Division received 17 proposals and a total request for \$3,107,202.00.

For the 2008 Nonpoint Source proposal cycle, in support of the NPS program, the Nonpoint Source Alliance offered a “consultation day” in December of 2007. The consultation day allowed project proponents to present their concepts to the Alliance members and receive comments and feed-back. This was done to ensure that project proposals were well designed, soundly technically developed and addressing the required elements. The WQCD Nonpoint Source team also participated in this consultation day.

After reviewing and ranking all the proposals, WQCD Nonpoint Source staff developed a draft funding recommendation list which was presented to the Colorado Water Quality Control Commission (WQCC) in March of 2008. The WQCC approved the NPS program’s recommendation without amendments.

Watershed	Project Title
Fountain Creek	<i>Fountain Creek Water Quality Demonstration Projects</i>
Kerber Creek	<i>Kerber Creek Restoration Project</i>
Statewide	<i>Nonpoint Source Newsletter (Continuation)</i>
Statewide	<i>Colorado Silviculture BMP Program Proposal</i>
Upper Arkansas River	<i>Little Frying Pan Water Quality Improvement</i>
Arkansas River	<i>Data & Models for Planning Nonpoint Source Se Management in LARB</i>
Willow Creek	<i>Lower Willow Creek Restoration Project</i>
Rio Grande	<i>2008 Rio Grande Riparian Stabilization</i>
Uncompahgre River	<i>Uncompahgre Basin Watershed Plan</i>
Upper Arkansas River	<i>Hecla Wash Restoration and Sediment Reduction</i>
Arkansas River	<i>Better Managing Irrigation Effluent Return Flows</i>
Lefthand Creek (St. Vrain Basin)	<i>Lefthand OHV Area Restoration: Phase 2</i>

III - - NPS Program Strategic Approach

Colorado continues to implement the revised strategies for the NPS program. CWA Section 319(h) funding sources are allocated under two categories: 1) incremental allocation: for projects that address impaired waters requiring TMDL development, including watershed-based plans; and 2) base allocation: all other activities, including education and information dissemination.

The first category, nonpoint source activities addressing impaired waters requiring a TMDL, is now being implemented in tandem with the Triennial Review Regulatory Basin rotation, as adopted by the Water Quality Control Commission. See Appendix A for Colorado Target Basin Rotation Schedule. For the 2008 funding cycle, the Arkansas River and the Rio Grande were the *Target Basins* for project funding under the incremental allocation, to include development of watershed-based plans. The second category addresses the development of watershed plans (a higher funding priority), implementation projects in non-impaired water bodies, and other statewide water quality preservation and/or restoration activities. Approximately 55% of the funds are applied to the incremental allocation and 45% to base allocation.

a) 2008 Targeted Priorities

The following priority project categories were identified for 2008 funding, within the context of the 2005 Supplement to the Colorado Nonpoint Source Management Program:

1. **Nonpoint source activities in impaired watersheds identified by the Clean Water Act Section 303(d)-listed waters.** Approximately \$1,066,700 was targeted and actually obligated to fund projects in this category. The following table describes the funded projects:

Project Title	Watershed	General Project Description	Funding Amount
<i>Hecla Wash Restoration and Sediment Reduction</i>	Upper Arkansas River	BMP Implementation, WQ Assessment, Restoration	\$425,000
<i>Better Managing Irrigation Effluent Return Flows</i>	Arkansas River	BMP Implementation, WQ Assessment, Restoration, Technical Assistance	\$42,250.00
<i>Lower Willow Creek Restoration Project</i>	Willow Creek, Rio Grande	BMP Implementation, WQ Assessment, Restoration	\$398,770.00
<i>Lefthand OHV Area Restoration: Phase 2</i>	St. Vrain River	BMP Implementation, WQ Assessment, Restoration	\$150,000.00
<i>Rapid Restoration</i>	Statewide	A place-holder for rapid response, if needed	\$50,680.00
Total			\$1,066,700

2. **Watershed planning in impaired watersheds indentified on the 303(d) list.** \$49,500 was targeted and obligated for watershed planning in impacted watersheds.

Project Title	Watershed	General Project Description	Funding Amount
<i>Uncompahgre Basin Watershed Plan</i>	Uncompahgre River, Gunnison Basin	Planning, WQ Assessment / Monitoring, Watershed Assessment	\$49,500
Total			\$49,500

- 3. Other proposals.** Projects that address *specific action items* in any of the NPS Action Plan items of the *Supplement to the Colorado Nonpoint Source Management Program (January 2005)* also were eligible. These proposals could include prevention projects or other watershed efforts where the target water body is not identified on the “303(d) List of Waters Still Requiring TMDLs”; they could address information/education needs of the program, as related to the action items; and they could be for the development of watershed plans in any area of the state. The amount targeted for the “Other Proposals” was approximately \$728,915.

Project Title	Watershed	General Project Description	Funding Amount
<i>Outreach Mini-grants</i>	Statewide	Set-aside for small grants targeted for Education and Outreach	\$24,000.00
<i>Little Frying Pan Water Quality Improvement</i>	Upper Arkansas River	BMP Implementation, WQ Assessment, Restoration	\$172,500.00
<i>Fountain Creek Water Quality Demonstration Projects</i>	Willow Creek, Rio Grande	BMP Implementation and Performance Evaluation, Revegetation, Sediment Control	\$250,000.00
<i>2008 Rio Grande Riparian Stabilization</i>	St. Vrain River	BMP Implementation, WQ Assessment, Restoration	\$250,000.00
<i>Nonpoint Source Newsletter (Continuation)</i>	Statewide	Education / Information	\$32,000.00
<i>Rapid Restoration</i>	Statewide	A place-holder for rapid response, if needed	\$415.00
Total			\$728,915

b) Integrating TMDLs and NPS Activities: Priority Watersheds

The NPS program prioritized watersheds in the state using the water quality standards segmentation of waterbodies as approved by the Water Quality Control Commission. The criteria for selecting *Priority Watersheds* were: 1) identify segments listed in Regulation № 93 – Section 303(d) List of Water Quality Limited Segments Requiring TMDLs and 2) identify watersheds containing those segments that are or have in the past used 319 funds for nonpoint source activities. Priority Watersheds are defined at the 8 or 10-digit Hydrologic Unit Code. In the future Colorado anticipates revising the List of Priority Watersheds using the 12-digit Hydrologic Unit Code basin map. See Appendix B for a Map of Colorado’s List of Priority Watersheds.

The following is the list of priority watersheds, which are grouped using the water body segmentation adopted by the WQCC and defined in the water quality regulations for Colorado’s river basins. Each impaired segment has been identified according to Regulation #93. There is also a short description of the NPS program potential or current contribution to the restoration of the impairment.

Arkansas River Basin

Upper Arkansas R.: NPS program contribution: there is a watershed restoration plan being developed for this area, with an anticipated outcome being a prioritization of potential restoration projects. The following segments will be incorporated as priorities in the watershed plan. This could potentially result in incremental money supporting future restoration work. These segments are the California Gulch to Lake Fork, Lake Fork to Lake Creek and Lake Creek to Pueblo Reservoir.

303(d) listed segments: COARUA02b (Cd and Zn), COARUA02c (Zn), COARUA03 (Zn)

Lower Arkansas R.: NPS program contribution: there are several projects being implemented in this area – a watershed plan, a large source identification and quantification study and model development with the collaboration of Colorado State University and projects in conjunction with the Southeast Conservation District. This segment extends from John Martin Reservoir to the Kansas stateline.

303(d) listed segment: COARLA01c (Se)

Purgatoire River: NPS program contribution: this is an area with potential for restoration projects, but there is a need to develop a watershed restoration plan. This segment is from I-25 near Trinidad to the confluence with the Arkansas River.

303(d) listed segment: COARLA07 (Se)

Gunnison River Basin

Uncompahgre River: NPS program contribution: currently, there is a 319 restoration project that is starting to address some of the Selenium loading into the Gunnison River. Selenium loading in surface waters is of concern throughout this area of the state and the solution will require coordinated efforts and a statewide strategy. These segments include the Uncompahgre Valley below Montrose.

303(d) listed segments: COGUUN04b, COGUUN04c (Se)

Upper Gunnison River: NPS program contribution: there is a watershed restoration plan being developed for this area, with a potential to prioritize restoration projects. The following segment will be incorporated as a priority in the watershed plan. This could potentially result in incremental money supporting restoration work. This segment is Palmetto Gulch.

303(d) listed segment: COGUUG31 (Cd, Zn)

Rio Grande Basin

Kerber Creek: NPS program contribution: there is a watershed restoration plan for this watershed, but it needs updating. The Kerber Creek watershed plan has a high potential to identify and implement appropriate reclamation activities. These segments include Kerber Creek and almost all tributaries.

303(d) listed segments: CORGCB09a (Ag, Cd, Pb, pH), CORGCB09b (Cd, Cu, Zn)

San Juan River Basin

Dolores River: NPS program contribution: this is an area with potential for restoration projects. This segment includes Silver Creek below the town of Rico.

303(d) listed segment: COSJDO09 (Zn)

Mancos River: NPS program contribution: there is a watershed restoration plan being developed for this area, with a potential to prioritize restoration projects. The following segment will be incorporated as a priority in the watershed plan. This could potentially result in incremental money supporting implementation and restoration work. This segment includes the Mancos River and tributaries above Hwy 160.

303(d) listed segment: COSJLP04 (Cu)

South Platte River Basin

Boulder Creek: NPS program contribution: this is an area with potential for restoration projects, with a need to first develop a watershed restoration plan. These segments are Coal Creek and Gamble Gulch.

303(d) listed segments: COSPBO07b (E. coli), COSPBO04a ((Cu, Zn, pH)

Clear Creek: NPS program contribution: the watershed restoration plan has been developed. The watershed plan has a high potential for identifying priorities that would support restoration work throughout this part of this watershed.

303(d) listed segments: COSPCL02, COSPCL03a, COSPCL03b, COSPCL06, COSPCL09a, COSPCL09b, COSPCL11 (metals)

Saint Vrain River: NPS program contribution: past work with a local entity; developing a watershed restoration plan. This segment is the Lefthand Creek.

303(d) listed segment: COSPSV04a (metals and pH)

Upper South Platte: NPS program contribution: this is an area with potential for restoration projects; existing watershed restoration plan.

303(d) listed segments: COSPUS02a (sediment)

Upper Colorado River

Peru Creek: NPs program contribution: this is an area with potential for restoration projects; development of a watershed restoration plan has started. This segment is the Peru Creek to the Snake River.

303(d) listed segment: COUCBL07 (metals)

Eagle River: NPS program contribution: this is an area with potential for restoration projects, but there is a need to update the watershed restoration plan. This segment is from Belden to Lake Creek and some tributaries.

303(d) listed segment: COUCEA06 (sediment)

c) Colorado Nonpoint Source Alliance

The Colorado NPS Alliance (Alliance) continues in its role of providing advice and support to Nonpoint Source Management Area staff in the technical aspects of implementing the NPS program. The Alliance also supports the NPS program staff in preparing and maintaining the state's Nonpoint Management Area program documents and in encouraging the public to become involved in nonpoint source activities. Members of the Alliance, in coordination with the NPS program staff, also work with interested project sponsors to help prepare projects for funding consideration under Section 319(h) of the Clean Water Act. The goal of the NPS Alliance is to provide support and technical advice in nonpoint source activities designed to preserve and restore water quality in Colorado. Each Alliance representative's primary duties and responsibilities include the following:

1. provide technical and area-of-expertise advice on nonpoint source issues and activities
2. serve as a liaison from member organization/agency to the Alliance;
3. serve as a liaison from the Alliance to member organization/agency;
4. actively represent nonpoint source water quality issues and provide input from member organization/agency for the benefit of Colorado water quality;
5. promote the nonpoint source program within the member organization/agency;

6. participate in the technical evaluation of nonpoint source project proposals submitted each year;
7. participate in NPS Alliance policy development;
8. work with a multitude of agencies and organizations to build cooperation and collaboration;
9. approach resolution of challenges through teamwork;
10. stay informed and inform others about nonpoint issues and water quality concerns; and
11. participate in statewide meetings and seminars on nonpoint source pollution.

2008 Organizational Membership of the Colorado NP S Alliance

U.S. Bureau of Land Management
 Colorado Association Stormwater and Flood Plain Managers
 Colorado Department of Transportation
 Chatfield Watershed Authority
 Colorado Cattlemen's Association
 Colorado Livestock Association
 Colorado Farm Bureau
 Colorado Lake & Reservoir Management Association
 Colorado Mining Association
 Colorado River Water Conservation District
 Colorado Division of Wildlife
 Colorado Division of Reclamation, Mining and Safety
 Colorado State Conservation Board/Colorado Department of Agriculture
 Colorado State University Cooperative Extension
 Colorado Water Quality Control Division
 U.S. Department of Agriculture (USDA) Natural Resources Conservation Service
 U.S. Geological Survey
 Northern Colorado Water Conservancy District
 North Front Range Water Quality Planning Association
 Pikes Peak Area Council of Governments
 Denver Regional Council of Governments
 Sierra Club
 League of Women Voters
 USDA Forest Service
 Lefthand Watershed Oversight Group
 Colorado Water Quality Control Commission
 U.S. Environmental Protection Agency, Region VIII
 Colorado Watershed Assembly

d) Load Reduction Reporting

Colorado regularly reports on load reductions associated with the regulations that govern loading of nutrients (Total Phosphorus and Total Nitrogen) into lakes and reservoirs. Colorado also reports on sediment loads into rivers and streams that are reduced or minimized based on BMPs implemented by the Colorado Department of Transportation (CDOT).

In order to enhance and expand on current load reduction reporting, the NPS program has established a new task force to develop protocols to capture load reduction data and meet the

required GRTS reporting minimum elements in a more comprehensive manner. This task force is made up of NPS program staff and members of the Alliance. The objectives of the task force are 1) to develop protocols to capture sediment and nutrients load reduction data associated with NPS BMPs implemented with Section 319(h) funds; and 2) to develop a simple system that allows project sponsors and other users to capture and submit those data to the NPS program. These data will be used to fulfill the minimum reporting requirements in GRTS and to help the NPS program evaluate success, through measurable results.

IV. Water Quality Information

a) Sampling and Assessment Activities

One element of the update to the NPS Management Program was to reaffirm Colorado's guidance on funding monitoring and assessment projects. U.S. EPA limits the amount of grant funds that may be used for monitoring and assessment, which includes the development of total maximum daily loads (TMDLs) and watershed plans. Use of NPS funds in these instances is limited to:

- collect data in direct support of the development and implementation of a total maximum daily load;
- determine measurable results from on-the-ground NPS projects;
- develop watershed plans identified as priorities in the annual proposal guidance.

NPS funds may not be used to determine "baseline" conditions. For example, they cannot be used to capture current conditions outside the development of a TMDL. Collecting data to evaluate current water quality classifications and standards or to conduct a use attainability analysis are also not eligible for NPS funding.

Any proposal to fund assessment in watersheds where water bodies are identified as impaired must be coordinated through the TMDL program at the Water Quality Control Division prior to submittal of the proposal.

b) Groundwater Protection Program

The Agricultural Chemicals and Groundwater Protection Program is administered as a joint effort between the Colorado Department of Agriculture (CDA), the Colorado Department of Public Health and Environment (CDPHE), and Colorado State University Cooperative Extension (CSUCE). Due to a difference in annual reporting time frames, the following reflects activities in 2007.

- ◆ In 2007, the Groundwater Protection Program completed the 13th year of a long-term monitoring effort on the section of the South Platte River running from Brighton to Greeley, in Weld County. Between June and September 2007, 28 irrigation wells, 17 monitoring wells and 10 domestic wells were sampled. There were a total of seven pesticide detections from all three networks, but only 10 of the 28 irrigation wells sampled underwent pesticide analysis. The monitoring well network had one detection for metalaxyl in one well, while the irrigation network had one detection each of phosphamidon and oxydemeton-methyl and two detections of dichlorvos. One domestic well detected dimethoate and another detected diazoxon, the breakdown product of diazinon. This year marked the first time in which

there were no detections of any of the top four most commonly detected pesticides in Weld County (atrazine, desethyl atrazine, metolachlor, and prometone).

- ◆ The Front Range Urban Monitoring Network was expanded in 2007 to more thoroughly cover urban areas along the Front Range. Cooperation occurred with city governments, school districts, and private and federal entities. The Program was able to install monitoring wells in Fort Collins and Colorado Springs, in addition to obtaining permission to use existing wells in Denver-metro, Castle Rock, Pueblo, and Greeley. In total, the network now has almost 80 sites with plans to establish 5-10 sites in Boulder and possibly 3-6 more sites in Colorado Springs in 2008. All locations will be sampled during the 2008 field season and will have baseline analysis for 104 pesticides, basic inorganic nutrients, and dissolved metals.
- ◆ The San Luis Valley was sampled in August and September, 2007, through cooperation with the United States Geologic Survey (USGS). Thirty-three wells were sampled in total with 21 of the wells being wells that were reinstalled deeper into the unconfined aquifer due to a declining water table. Results from the reinstalled wells are being treated as a new sample population and 2007 data for the wells will determine a new baseline. Preliminary pesticide results from the USGS laboratory show a total of 22 pesticide detections in 15 of the 33 sampled wells with the most commonly detected pesticides being metribuzin and metolachlor.
- ◆ In 2007, Program personnel completed a long-term monitoring plan for the Program (*Long-Term Groundwater Monitoring Strategy and Plan*). This document will be used to drive program monitoring efforts for the next 5-10 years and will also help determine where new well networks should be installed.
- ◆ In 2007, Program personnel, in conjunction with the Integrated Decision Support Group in the Civil Engineering Department at CSU, completed a publically available, web-based tool that will interactively query the groundwater quality information associated with the Program.
- ◆ The CDA is working with the CDPHE and EPA to coordinate a surface water sampling program to help satisfy CDA's responsibility for an EPA requirement that states evaluate a list of *Pesticides of Interest*.
- ◆ In 2006, Clean Harbors, Inc. took responsibility of the Waste Pesticide Disposal program from MSE. The CDA is working with Clean Harbors to make sure this program continues in an efficient manner.
- ◆ Section 25-8-205.5 (3)(b) of the Agricultural Chemicals and Groundwater Protection Act requires the Commissioner of Agriculture to develop rules where pesticides and fertilizers are stored or handled in quantities that exceed the established thresholds. Pesticide and fertilizer facility inspections continued in 2007.
- ◆ The Advisory Committee continues to be an integral part of the implementation of this program by providing input from the many facets of the agricultural community and the public that they represent. The committee met once during 2007.
- ◆ The CDA and CSUE conducted an on-line pesticide use survey for Colorado in 2006 and 2007. Due to an inadequate response in 2006, the survey was conducted again in 2007. The last pesticide use survey was done in 1997.
- ◆ The Program addressed groups on SB 90-126 and issues related to agricultural chemicals and ground water quality. Groups addressed include chemical dealers, ground water management districts, crop and livestock producers, and agency personnel.
- ◆ The Program distributed fact sheets and reports on Colorado ground water quality to interested parties and fielded questions by phone and e-mail to Colorado citizens.

- ◆ The Program cooperated with county Extension agents on disseminating information about Colorado ground water quality.
- ◆ The Program worked to coordinate efforts of the Agricultural Chemicals and Ground Water Protection program with other state and federal programs in Colorado.
- ◆ Colorado State University Cooperative Extension has worked with the Colorado Department of Agriculture to continue developing Best Management Practices (BMPs) for Colorado farmers, landowners, and commercial agricultural chemical applicators. Because of the site-specific nature of groundwater protection, the chemical user must ultimately determine the BMPs adopted for use at the local level. The local perspective is also needed to evaluate the feasibility and economic impact of these practices. The Program Advisory Committee has recommended that a significant level of input be received at the local level prior to adoption of recommended BMPs.
- ◆ The Groundwater Program at CSUCE conducted educational programs throughout Colorado on issues related to agricultural chemicals and groundwater quality. Groups addressed include: crop and livestock producers, commercial applicators, chemical dealers, conservation districts, crop consultants, NRCS agency personnel, homeowners, private well owners, real estate professionals, and urban chemical users.

The 2007 annual report for the Agricultural Chemicals and Groundwater Protection Program may be obtained by contacting the program at (303) 239 -5704.

V. Outreach Activities

Keep It Clean Neighborhood Stewardship Program

The Keep it Clean Partnership (formerly know as the Watershed Approach to Stream Health or WASH Project) is comprised of the following: Boulder County; the cities of Boulder, Longmont, and Louisville; and the towns of Erie and Superior. Individually, they are referred to as “Partners.” These Partners have contracted with the City of Boulder’s Stormwater Education Program to support and expand delivery of stormwater education to the public and school-aged children in Keep it Clean Partnership communities. The Keep it Clean Partnership Education Program provides school-based education and community based outreach programs that meet state requirements for Minimum Control Measures (MCM) 1 and 2. The Keep it Clean Partnership contract was signed in May 2003, at which time services began.

Colorado Foundation for Agriculture

The Colorado Foundation for Agriculture continues its outreach efforts to reach Colorado school children through a multifaceted approach. Key to the program is the Colorado Reader that reaches over 1,500 schools in the state. An electronic newsletter exists and an online watershed game. More information can be found at <http://www.growingyourfuture.com/>.

AWARE Colorado

The League of Women Voters of Colorado Education Fund continues an outreach effort based on the University of Connecticut’s Nonpoint Education for Municipal Officials program. Addressing **W**ater And natural **R**esource **E**ducation (AWARE) is a statewide program designed to educate local decision makers about the impacts of land use choices on water quality. AWARE will provide research-based, non-advocacy material so decision makers can better consider water quality impacts when making land use decisions. The program is guided by an

advisory group of more than 30 stakeholders. More information can be found at <http://www.awarecolorado.org>.

Colorado NPS Connection

The nonpoint source newsletter, *Colorado NPS Connection*, now publishes as an electronic-only newsletter. Past issues of the newsletter are available on the Colorado Water Protection Project Web site at <http://www.ourwater.org>.

Information and Education Outreach Grant Program

For several years, the nonpoint source program has set aside a small percentage of funds from the regular Section 319(h) allocation for small, highly focused educational efforts. These small-scale projects typically leverage the modest amounts of money into major community-outreach efforts with statewide applications. Fund availability is marketed to schools, nonprofit organizations and local watershed groups.

Watershed Conference: *Sustaining Colorado's Watersheds*

About 250 people from all parts of Colorado, representing many different interests attended this conference in October, 2008. Attendance included individuals representing local watershed groups, scientists from many disciplines, federal, state and local agencies, several water conservation districts, water user associations, private industry, and environment groups. Several state representatives, other elected officials, and Water Quality Control Commissioners also attended. Topics included *Balancing Water Quality, Quantity and Energy Development, Water Resources Challenges, Wildlife and Habitat, Understanding the Health of Colorado's Water, Multi-System Impacts to Water Resources, Protecting and Restoring Our Watersheds in a Changing West and Linking Land-Use and Water Quality*.

VI -- Federal Consistency Activities

Federal agencies manage or otherwise influence a significant portion of Colorado's land area. In fact, nearly 37 percent of the land and water in the state is federally owned, largely in headwaters areas. Consequently, federal consistency with state water quality standards and programs is critical to achieving water quality goals in all river basins in the state.

The division periodically conducts federal lands management reviews to determine the following:

1. Is water quality addressed in the planning stage?
2. What best management practices were to be implemented?
3. Were they implemented properly?
4. Were the best management practices effective in reducing erosion or protecting the stream from nonpoint source pollution?
5. If not, what changes can be made to protect water quality?

The 2008 Colorado Federal Consistency review was conducted on two US Forest Service (USFS) sites. The review was held in conjunction with an audit of BMPs for silviculture. The audit is a 2008 NPS project of which the Colorado State Forest Service (CSFS) is the sponsor. The CSFS formed an interdisciplinary team for the audit including representatives from three federal agencies, three private or local agencies, and seven state agencies.

The team visited six timber harvest sites in north-central Colorado in September 2008 to assess Colorado forestry BMP implementation and effectiveness. Sites were selected from federal, state, and private lands. Each site was evaluated on planning, roads, harvesting, slash treatment, revegetation, chemical use, and fire management according to written criteria in the Colorado Field Audit Rating Guide. The two USFS sites were in the White River National Forest near Frisco, CO. The sites were Iron Springs unit 1 and Wildernest unit 2.

The 2008 audit results showed BMPs were met or exceeded 87% of the time. Major departures from the BMPs were rare resulting in no gross neglect. BMPs were effective in providing adequate resource or improved resource condition 81% of the time. State and federal effectiveness rates were 90 and 92%, which was higher than on private land.

Recommendations resulting from the audit included: expanding the dissemination of information on prescribed burning in the Stream Side Management Zone; providing guidance for onsite camp sanitation; adding new technologies for mitigated stream crossings emphasizing the utilization of existing sites for landings, roads and trails; and, planning for ongoing monitoring. Reference for the selection, results and recommendation statements is the *Colorado Forestry BMPs Forest Stewardship Guideline for Water Quality, 2008 Field Audit Report*.

VII -- Federal Agency Contributions to NPS Management in Colorado

In FFY08, the following activities were conducted to review and coordinate land management practices and water quality:

1 -- U.S. Bureau of Land Management

BLM is contracting with USGS to establish three gauging stations in the Piceance Basin. In addition to collecting streamflow, water quality parameters are being collected at these sites. BLM is also working with Shell and the USGS to collect groundwater data in the Piceance. Continuous pH, conductivity, dissolved oxygen, and temperature data is also being collected on the Roan Plateau. This is part of an overall regional monitoring strategy to assess potential effects of oil and gas development on water resources.

BLM is working with the USGS in Utah to assess potential grazing impacts on salinity, biological soil crusts and sediment delivery in Badger Wash near Mack, CO. Moreover, this project is documenting how livestock grazing affects the amount of sediment, salinity, and selenium released from Mancos-shale derived soils into temporary waters that drain into the Colorado River. This study has been going on for the last 8 years.

BLM is working with the NRCS to complete out-dated or incomplete soil surveys on BLM administered lands. Approximately 200 acres was done in 2008, mostly in Mesa County.

Approximately 2,000 feet of the San Miguel River near Placerville, CO was stabilized by installing Rosgen “J-hooks”, armoring streambanks with a combination of rock, mulch and willow plugs. The river was eroding a portion of the scenic highway.

BLM is continuing watershed land health based assessments, as well as associated water quality and proper functioning condition (PFC) surveys on approximately 440,000 acres. BLM worked with the Colorado Water Conservation Board (CWCB) to acquire in-stream flow water rights on six streams to maintain aquatic habitat. Invasive species, primarily tamarisk, were treated within riparian areas in order to restore native vegetation. Riparian exclosures and planting of native vegetation were conducted to maintain riparian function. Approximately 135 miles of riparian areas were completed. 204 miles of PFC surveys were completed. Detailed references can be found at: <http://www.blm.gov/nstc/library/techref.htm>

BLM continues its long relationship with the Division of Reclamation, Mining and Safety (DRMS) and EPA to remediate abandoned mine land sites in Colorado. The following projects are currently being implemented: Joe and John Lark, Dinero Tunnel, Ute-Ulay Mine / Mill, Eveline, Kerber Creek, Tiger Tunnel, Mogul Dump, Gladstone, Bats and Mines, Animas O&M, Milsap, Dinero Dumps, Querida, Eureka and California Mountain.

2 -- U.S. Department of Agriculture Forest Service

The general approach to nonpoint source pollutant management for the Rocky Mountain Region of the USDA Forest Service, which includes all National Forest System lands in Colorado, is found in Chapter 20 of the Watershed Conservation Practices Handbook (FSH 2509.25-2006-3). This chapter outlines a nonpoint source management strategy to apply Watershed Conservation Practices (i.e. Best Management Practices) when implementing all land management projects, monitor implementation and effectiveness of those practices, and adjust those practices where monitoring shows concerns about the effectiveness of the practice. National Forests in Colorado use these Watershed Conservation Practices and Forest Plan standards and guidelines to ensure that State water quality standards are met and classified uses of water are protected when projects are designed and implemented on the ground. National Forest staff conducts formal and informal monitoring of these practices and adjusts them as necessary, per the nonpoint source management strategy.

USDA Forest Service also has direction in a number of program areas to restore watersheds to reduce or prevent additional nonpoint source pollution.

Burned Area Emergency Rehabilitation

The purpose of this program is to alleviate emergency conditions following wildfire to help stabilize soil; to control water, sediment and debris movement; to prevent permanent impairment of ecosystem structure and function; and to mitigate significant threats to health, safety, life, property or downstream values. In 2008, there were no fires on National Forest System (NFS) lands in Colorado that qualified for BAER treatments. However, the Grand Mesa, Uncompahgre and Gunnison National Forests did 400 acres of rehabilitation and restoration work on the Coal Creek Fire in October, 2008. The work focused on Kannah Ck watershed, a municipal watershed for Grand Junction to address concerns about increased risk of water quality impacts and accelerated erosion of the steeper burnt slopes.

Healthy Forests and Rangelands – Hazardous Fuels Reduction and Landscape Restoration

The purpose of this program is to treat the excessive accumulation of hazardous or unusually flammable fuels in the forests and rangelands that are the root cause of an unprecedented fire

risk on national forest lands. Fuels treatments occur both inside and outside the wildland urban interface (WUI). Treatments inside the WUI are designed to reduce fuels around homes, communities and other resources, such as municipal water supplies and infrastructure, to slow or stop wildland fires from threatening these high-value areas. Treatments outside the WUI help protect communities by creating conditions that enable firefighters to more successfully suppress fires before they enter the WUI and reduce fire severity and impacts on valued landscapes and natural resources. In 2008, the Forest Service completed fuel treatment projects on 35,137 acres inside the WUI and another 35,200 acres outside the WUI for a total of 70,337 acres.

Watershed Restoration

The purpose of this program is to improve watershed conditions using upland and instream treatments. Possible projects include road improvements such as correction of cut or fill slope failures, scarification of compaction on upland areas (old skid trails, for example), reclamation of old gravel quarries, etc. National Forests in Colorado reported accomplishments of about 850 acres of soil and water improvements in 2008.

Road Maintenance

The regular road maintenance program includes inventory for maintenance needs, actual maintenance of roads to improve travel-ability and reduce resource damage, and road decommissioning. Road decommissioning activity encompasses a range from posting a sign or installing a gate to close a road to public use to “storm-proofing” a road by pulling drainage structures to road obliteration including scarification and seeding of the road surface or actually re-contouring the slope to eliminate the road prism. National Forests in Colorado reported accomplishments of about 5,347 miles of road maintenance and another 165 miles of road decommissioning in 2008.

Legacy Road and Trail Remediation Initiative

This was a new funding program in FY 2008 developed through a transfer of purchaser election funds and from the Ten Percent Road and Trail Fund. These funds combined with partnerships were to be used for road decommissioning, road and trail repair in environmentally sensitive areas with water quality issues. In stream and water bodies which support TES and community water systems. In Colorado, 74 stream crossings were reconstructed, 57 miles of stream habitat was restored, 40 miles of roads and 222 miles of trails were maintained or improved, 198 miles of roads were decommissioned and 1,439 acres of watershed were improved.

Abandoned Mine Program

USFS implements a risk-based approach to encourage watershed-wide cleanups that leverage resources through collaboration with other stakeholders. USFS also works to mitigate hazards at Abandoned Mine Lands (AML)-affected watersheds in western, arid climates where water is scarce and the need to improve water quality for human and aquatic resources use is critical. Addressing AML impacts is becoming increasingly important as more and more people choose to live near and recreate in public lands. USFS has expanded the outreach efforts to increase awareness and educate the public about the serious dangers that exist at abandoned mine sites. USFS improved information and technology transfer through avenues such as the newly redesigned Web sites (see <http://www.blm.gov/aml> and <http://www.fs.fed.us/geology/aml-index.htm>) and project highlights. In addition, USFS continues to work with the commercial sector, such as off-highway vehicle distributors, to

increase education and awareness as more remote sites are being developed and accessed for recreation.

National Forests in Colorado initiated and/or completed restoration work on 7 abandoned mines projects in 2008. This work consisted primarily of work around 97 features including 80 old mine shafts and adits, and 3 structures. While much of this work was for human health and safety, some was focused on reducing acid mine drainage and sediment delivery to nearby stream channels. In 2008, the AML CERCLA program worked with EPA to complete the removal action on the Standard Mine site, Golden Age Mine site and Fair Day Mine (2 removal actions).

3 -- U.S. Department of Agriculture NRCS

Most NRCS resource issues have a positive impact on water quality, directly or indirectly. For example, the grazing land improvements promote better range land health which typically reduces excess surface runoff with a potential improvement to water quality due to reduced sediments and organics carried into the surface waters. Wildlife habitat, riparian management, and forest management will often have a similar effect. Soil erosion control reduces sediments which carry nutrients, organics, and other pollutants to surface waters. The Ground and Surface Water program focuses on reducing net water use, which can also have a positive impact to water quality due to less deep percolation.

4 -- U.S. Geological Survey

The U.S. Geological Survey (USGS) provides data and information that can help others protect water quality. The USGS provides reliable scientific information to describe and understand the earth, which helps others manage water, energy, mineral and biological resources. Some of the scientific information from the USGS could be used to identify impaired streams or ground-water resources. Some of the scientific information from the USGS could be used to evaluate the success of nonpoint source projects or even parts of the Colorado Nonpoint Source Program. The following are three examples of USGS work that can be used to evaluate the success of nonpoint source projects or the Colorado Nonpoint Source Program:

- 1) USGS long-term data-collection sites downstream from on-the-ground nonpoint source projects. Site locations and site data are available online from the *Directory of Project Information and Data Collection Sites* at <http://co.water.usgs.gov/>.
- 2) USGS projects designed specifically to monitor and evaluate on-the-ground nonpoint source projects, such as the USGS Grand Valley projects (described in USGS Fact Sheet FS-159-97 by Butler and USGS WRIR 01-4204 by Butler). Project areas, site locations and site data are available online from the *Directory of Project Information and Data Collection Sites* at <http://co.water.usgs.gov>
- 3) National or regional USGS projects that include water quality trend analyses, such as the USGS National Water Quality Assessment Program, South Platte Study Unit (e.g., USGS Fact Sheet FS-153-95 by Heiny).

USGS Activities Relevant to Nonpoint Source Pollution

1. design water quality studies
2. develop methods for water-resources investigations
3. develop and refine analytical methods and sampling procedures

4. develop and update water quality models
5. model hydrologic and water quality responses of flow systems
6. monitor water quality and changes in water quality
7. compile and evaluate retrospective water quality data sets
8. provide water quality and hydrologic data to interested parties
9. provide water quality expertise to organizations and groups
10. characterize water quality of streams, lakes and groundwater
11. characterize hydrologic conditions, including local or statewide trends
12. determine water quantity in order to calculate constituent loads in streams
13. evaluate stream morphology and sediment transport
14. identify pollution sources
15. study fate and transport of compounds and pollutants
16. evaluate effects from events (such as wildfire) or change (such as urbanization) on water quality
17. perform research related to water quality issues

Appendix A:
Target Basin Rotation Schedule

Nonpoint Source Program - Target Basin Rotation Schedule

Years

Legend:

- Arkansas/Rio Grande Basins =
- Upper/Lower Colorado Basins =
- San Juan/Gunnison Basins =
- S. Platte/Republican Basins =
- Statewide/Flexible =

2018	So PI / Rep	Up / Lo CO	So PI / Rep	Ark / RG
2017	Up / Lo CO	Ark / RG	Up / Lo CO	SJ / Gunni
2016	Ark / RG	SJ / Gunni	Ark / RG	STW
2015	SJ / Gunni	STW	SJ / Gunni	So PI / Rep
2014	STW	So PI / Rep	STW	Up / Lo CO
2013	So PI / Rep	Up / Lo CO	So PI / Rep	Ark / RG
2012	Up / Lo CO	Ark / RG	Up / Lo CO	SJ / Gunni
2011	Ark / RG	SJ / Gunni	Ark / RG	STW
2010	SJ / Gunni	STW	SJ / Gunni	So PI / Rep
2009	STW	So PI / Rep	STW	Up / Lo CO
2008	So PI / Rep	Up / Lo CO	So PI / Rep	Ark / RG

Monitoring

Rule Making

NPS Base Grant

NPS Incremental Grant

Activities

Appendix B

Priority Watersheds: Integrating TMDLs and NPS Activities

Priority Watersheds: Integrating TMDL and NPS efforts

