

COLORADO

NONPOINT SOURCE PROGRAM

FY 2005 ANNUAL REPORT



WATER QUALITY CONTROL DIVISION  
COLORADO DEPARTMENT OF  
PUBLIC HEALTH AND ENVIRONMENT



*In-stream improvements in the Rio Blanco*



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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 use those waters impaired by nonpoint sources of pollution and to prevent future impairments by using an open process that fully involves the public.

Through Fiscal Year 2005, the division continued to administer the updated *Colorado Nonpoint Source Management Program*, which the Colorado Water Quality Control Commission adopted on January 10, 2000, and EPA approved on January 28, 2000. The document is available upon request or online at: <http://www.cdphe.state.co.us/wq/nps/2000MgtProg.html>. In addition, the 303(d) list for 2002 and the *2002 Status of Water Quality in Colorado* 305(b) report were also used for program implementation activities. The 305(b) report serves as a periodic update of the nonpoint source assessment.

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](mailto:nps@state.co.us).

### **Colorado Nonpoint Source Council**

The Colorado Nonpoint Source Council, a voluntary assembly of government agencies and public interest groups, advises the division in the conduct of the nonpoint source program. The council and its committees are essential in helping the division prepare and maintain the state's nonpoint management programs and in encouraging the public to become involved in nonpoint source control efforts. The council, in coordination with the division, also works with interested project sponsors to prepare projects for funding consideration under Section 319(h) of the Clean Water Act. The goal of the Nonpoint Source Council is to promote an effective nonpoint source program designed to achieve and maintain beneficial uses of the waters of Colorado. Each representative's primary duties and responsibilities include the following:

1. serve as a liaison from member organization/agency to the council
2. serve as a liaison from the council to member organization/agency
3. actively represent nonpoint source water quality issues and provide input from member organization/agency for the benefit of Colorado water quality
4. promote the nonpoint source program within the member organization/agency and as other opportunities are presented
5. participate in the evaluation process for the nonpoint proposals submitted each year, including committee proposal review meetings
6. participate in council policy and program development

7. work with a multitude of agencies and organizations, which may hold divergent points of view
8. approach resolution of challenges through teamwork.
9. stay informed and inform others about nonpoint issues and water quality concerns
10. participate in statewide meetings and seminars on nonpoint source

**2005 Member Organizations of the Nonpoint Source Council**

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

**II. Nonpoint Source Implementation Activities**

Congress began appropriating funds for Section 319 implementation activities in 1990. Prior to and including 1990, states had the option of redirecting some of their construction grant funding for nonpoint source activity. Below is a list of open grants from the congressional appropriation Colorado is using for nonpoint source implementation

**Section 319(h) Nonpoint Source Funding**

FY 94	\$ 971,221	FY 01	\$2,407,200
FY 97	\$1,259,200	FY 02	\$2,382,200
FY 98	\$1,302,200	FY 03	\$2,369,400
FY 99	\$2,000,200	FY 04	\$2,339,700
FY 00	\$2,000,200	FY 05	\$1,962,700

Colorado experienced a significant reduction in funds in 2005, due to a commensurate decrease in the congressional appropriation. As a result, fewer funds were available for base program activities.

These funds support a wide variety of activities to prevent or reduce nonpoint source loading to Colorado waters. Tables 2 and 3 summarize funded projects by pollutant category and activity. In a few instances, the numbers may differ from previous years due to changes in the definitions of some of the categories and activities.

**TABLE 1. PROJECTS BY POLLUTANT CATEGORY, 1990-2005**

Category	Number of Projects
Agriculture	63
Silviculture	3
Urban/Construction/Roads/Highways/Septics	38
Mining	62
Hydrologic Modification	3
Crosscutting - addresses more than one category	69

**TABLE 2. PROJECTS BY ACTIVITY, 1990-2005**

Watershed, including planning and restoration	113
Information and Education	70
Assessment, including groundwater	30
Demonstration	16
Technical Assistance/Staffing and Support	9

### Staffing and Support

Funding for staffing and support is administered through the annual Performance Partnership Agreement and Grant. The 2005 staffing and support grant was \$575,000, which funds 4.52 full-time equivalents (FTEs). The FTEs include a full-time program coordinator, portions of the time of the division's four watershed coordinators and support from other units, such as contracting.

### 2005 Targeted Priorities

The following priority project categories were identified for 2005 funding, within the context of the management program:

- 1. Nonpoint source activities in watersheds impacted by Clean Water Act Section 303(d)-listed waters.** Approximately \$1,200,000 was targeted for this category; of this, \$100,000 was set-aside for development of watershed-based plans.
- 2. Watershed planning in non-303(d) impacted watersheds.** Approximately \$100,000 was targeted for watershed planning in non-total maximum daily load (TMDL) impacted watersheds, with a maximum grant of \$25,000 for each planning project.
- 3. Other proposals.** Projects that address *specific action items* in any of the six chapters of the *Colorado Nonpoint Source Management Program (January 2000)* also were eligible. These proposals could include prevention projects or other watershed efforts where the target water body is not identified on the "List of Waters Still Requiring TMDLs" (303(d) list), or they could address information/education needs of the program, as related to the action items. The amount targeted for the "Other Proposals" was approximately \$680,000.

A full description of the targeted priorities is in Appendix A.

## **Projects Approved for Funding in 2005**

The proposal process for 2005 (Appendix A) generated 21 proposals that requested more than \$1.6 million. Individual proposals ranged in value from \$12,000 to more than \$300,000. Seventeen new projects were funded. See Appendix B for the list of projects approved in the 2005 process.

## **III. Program Milestones**

### **NPS Management Program Update**

The *Colorado Nonpoint Source Management Program* was updated in 2005 and approved by the Water Quality Control Commission in August 2005 as a supplement to the 2000 program document. Much of the background information in the 2000 Program was still relevant, so it was not repeated in the 2005 document. The [2005 program document](#) focuses on updating the priorities and action items and provides guidance for 2006 and beyond. Several key policy changes also were made.

### **Use of NPS funds on private land**

One requirement for NPS grant funding is long-term operation and maintenance of any best management practice implemented with NPS funds. Long-term operation and maintenance is best assured when the landowners and/or operators (for instance, lessees) in a watershed are active participants both in the stakeholder organization and in voluntarily implementing best management practice s.

Landowners and/or operators will be required to commit to a minimum period of operation and maintenance, which will be determined on a project-by-project basis, and is based on the expected life of the project. Several organizations, including USDA, have developed best management practice life-span guidelines, which will be used, in part, to determine an appropriate project life span.

Landowners and/or operators also will be required to participate financially in implementing best management practice s on their land. The expected contribution is at least 25 percent of the cost of best management practice implementation on their properties. Their contribution can either be by direct cost contributions, i.e., cash, or through in-kind services, e.g., labor.

In appropriate circumstances, the program will ask affected landowners to execute an environmental covenant in exchange for the use of nonpoint source grant funds on their properties. An environmental covenant is a mechanism by which current and future owners of a property agree to maintain and/or not interfere any institutional controls (such as a cap, fencing, access requirements, diversion ditches, water well prohibitions, etc.) that are part of an approved remedy and are necessary to protect public health and the environment. The department believes that an environmental covenant is appropriate where nonpoint source grant funds are used on a project that results in residual contamination at levels that have been determined to be safe for one or more specific uses, but not all uses, or that include the incorporation of an engineered



feature or structure that requires monitoring, maintenance or operation or that will not function as intended if it is disturbed.

If the landowner obtains the benefit of nonpoint source grant funds, the department believes that it is fair as a matter of policy to attach reasonable conditions that help ensure that the remedy paid for with such funds remains effective. In appropriate circumstances, the department will thus give priority to projects where the landowner agrees to a covenant.

### **Public access to lands restored/improved with NPS grant funds**

There is precedent in the Clean Lakes Program to require public access to those water bodies improved or restored with the use of public funds:

*The Clean Lakes Program will only address publicly owned lakes with public access to the lake through publicly owned contiguous land so that any person has the same opportunity to enjoy nonconsumptive privileges and benefits of the lake as any other person. If user fees are charged for public use and access through State or sub-state operated facilities, the fees must be used for maintaining the public access and recreational facilities of this lake or other publicly owned freshwater lakes in the State, or for improving the quality of these lakes (40 CFR 35.1605-3).*

When NPS grant funds are used for stream restoration/improvement projects, the watershed plan that prioritized the stream project also must describe how public access will be provided to the improvements gained by the project. Proposals for nonpoint source grant funding that provide public access will be given priority for funding, assuming all other criteria are met. NPS funds may not be used on projects that could improve a fishery used for private or exclusive purposes, private or personal gain or benefit.

### **Total Maximum Daily Loads**

Section 303(d) of the federal Clean Water Act requires states to identify water bodies or stream segments that are water quality-limited. In Colorado, water quality-limited segments are identified on the 303(d) lists for 1998, 2002, and 2004. Water quality-limited segments are those water bodies or stream segments for which one or more assigned use classifications or standards are not fully achieved.

To date, seven of the 10 TMDLs identified as priorities in the 2000 *Colorado Nonpoint Source Management Program* have been addressed. Colorado's TMDL program, including links to all TMDLs completed to date and the delisting rationale, may be viewed online at <http://www.cdphe.state.co.us/wq/Assessment/TMDL/tmdlmain.html>.

### **Other Milestones**







As "measurable results" become more important to the nonpoint source program, both in Colorado and nationally, the annual report will include more information related to the program activity measures identified in the EPA's National Water Program Strategic Plan for 2004-2008.





**TABLE 3. PROGRAM ACTIVITY MEASURES**

<b>Watershed plans being developed</b>	<b>Watershed plans being implemented</b>
Willow Creek, Rio Grande River Basin Stollsteimer Creek, San Juan River Basin North Fork of the Republican River, Republican River Basin Lake Fork of the Gunnison River, Upper Gunnison River Basin Lefthand Creek, South Platte River Basin Coal Creek, Upper Gunnison River Basin Clear Creek, South Platte River Basin	Animas River, San Juan River Basin Cherry Creek, South Platte River Basin Straight Creek, Upper Colorado River Basin Black Gore Creek, Upper Colorado River Basin



**Projects Completed in 2005**



<b>Award Fiscal Year</b>	<b>Project Title</b>				
<b>2001</b> Total Budget: \$1,834,861 NPS Funds: \$188,467	<p><u>Cherry Creek Basin Water Quality Authority Lower Cottonwood Creek Stream Restoration Project</u></p> <p>Cherry Creek Reservoir, in the southeast Denver Metro area, is one of the most heavily used state parks in Colorado, with more than 1.5 million visitors each year. The primary purpose of the project is to reduce streambed and stream bank erosion, which contains phosphorus that makes its way into Cherry Creek Reservoir and contributes to water quality degradation in the reservoir. The project is intended to re-create, as closely as possible, a natural, well-vegetated, functional stream system that will provide water quality, habitat and aesthetic benefits for the authority and the park. Based on the authority’s experience with the Shop Creek channel, the proposed concept for Cottonwood Creek channel can reduce phosphorus loading through wetlands treatment, infiltration and settling, in addition to immobilizing phosphorus through stream stabilization. When both phases of the Cottonwood Creek Reclamation are completed, the project is expected to immobilize 730 pounds of phosphorus annually.</p>				
	<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: center;"><i>Cottonwood Creek – before</i></th> <th style="text-align: center;"><i>Cottonwood Creek – after</i></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">  </td> <td style="text-align: center;">  </td> </tr> </tbody> </table>	<i>Cottonwood Creek – before</i>	<i>Cottonwood Creek – after</i>		
<i>Cottonwood Creek – before</i>	<i>Cottonwood Creek – after</i>				
					

Award Fiscal Year	Project Title
<p><b>2002</b>  Total Budget: \$366,703  NPS Funds: \$217,331.</p>	<p><u><b>Florida Watershed Post-Fire Rehabilitation</b></u>  The 2002 wildfire season in Colorado burned more acres than previously recorded. The second largest fire, Missionary Ridge, burned more than 70,000 acres northeast of Durango in southwestern Colorado. The burned area included the upper Florida River Watershed, which is the primary source of drinking water for Durango. This project was to reduce the sediment and debris emanating from burned areas and entering the Florida River and Lemon Reservoir. Best management practices were installed to control the sediment and debris, including five steel debris racks, 13 check dams, 190 tons of straw mulch and reseeded 250 acres. All structures are periodically cleaned of sediment and debris to maintain their function and continue protecting the dam and reservoir. Vegetation also is monitored and replaced to maintain ground cover.</p>
	
<p><i>Mulch on steep slopes above Lemon Reservoir</i></p>	<p><i>Successful revegetation after one year</i></p>
<p><b>1997</b>  Total Budget: \$215,277  NPS Funds: \$91,200</p>	<p><u><b>Rio Blanco Habitat Restoration</b></u>  The project's primary goal was to restore the natural stability of the Rio Blanco channel to reduce water quality degradation, increase the stream's capacity to transport sediment given the existing lower flow regime, and maintain and/or improve floodplain functions. This was Colorado's first hydrologic modification nonpoint source water quality improvement project.</p> <p>The project restored a 1.1-mile section of the Rio Blanco by installing rock vortex weirs, bank protection, stream meanders and grade control. The banks were reclaimed with native willows. Fishery habitat has been improved through the enhancement of pools and riffles throughout the 1.1-mile reach. Bank erosion has been arrested and vegetation has been established.</p> <p>The data collected to date suggest that the water temperatures and the air-water temperature differentials have improved as a result of this project. The structures in the stream have definitely made the stream narrower and deeper. The bankfull top width of the stream and the width-depth ratio has decreased</p>

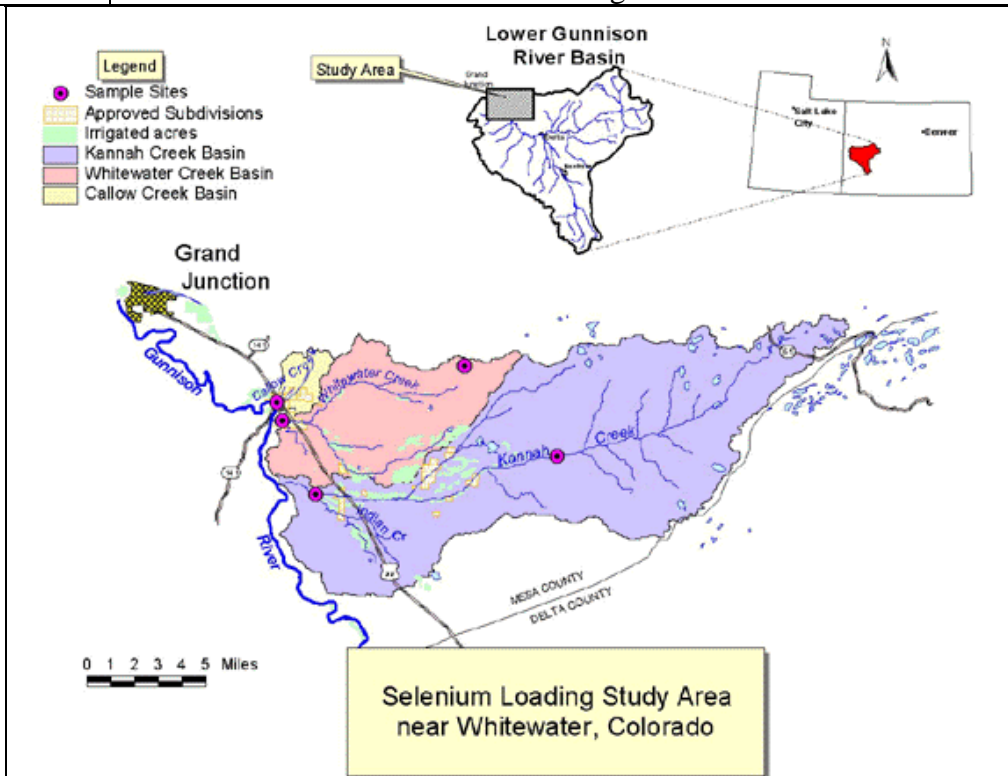
Award Fiscal Year	Project Title
	<p>substantially. The residual pool depth at low flow has increased by several feet at most locations downstream of the rock structures. The number and volume of pools in the project reach have increased by a factor of four or more. Preliminary review of the limited data suggests that this project has improved both aquatic physical habitat and select physical and chemical water quality parameters.</p> <p><i>See photo on the front cover of this document.</i></p>
<p><b>2000</b>  Total Budget:  \$194,351  NPS Funds:  \$105,409</p>	<p><b><u>Uncompahgre River Basin Selenium Phytoremediation</u></b></p> <p>The goal of this project was to demonstrate the feasibility of using selected agriculture crops and trees with economic value to remove selenium from soils and water, thereby reducing selenium loading from irrigated lands, to underground drainage waters, and ultimately, to waters of the Uncompahgre and Gunnison Rivers.</p> <p>The project demonstrated that hybrid poplar trees adapted well to the climate in western Colorado, had very robust growth (approximately 10 feet per year) in soils of the Uncompahgre River Basin, and are effective at removing selenium from the soils and ground water and concentrating it in harvestable wood and leaf material (mean selenium content in wood = 0.195 ppm, and leaves = 1.99 ppm).</p> <p>Based on biomass calculations, selenium uptake and growth characteristics, the best performing tree variety was OP-367 (<i>Populus deltoides</i> X <i>Populus nigra</i>) and the best crops were a companion planting of Tall Fawn Fescue (<i>Festuca arundinacea</i>), and Birdsfoot trefoil (<i>Lotus corniculatus</i>) that were harvested as hay. Kenaf (<i>Hibiscus cannabinus</i>) and Canola (<i>Brassica napus</i>) also were grown in the test plots; however, their growth was not robust enough under the climate conditions in the Uncompahgre River basin to produce harvestable products. Kenaf did poorly because the growing season was too short, whereas the Canola (more of a cool-season crop) suffered from the hot summer days. Both crops did, however, produce adequate vegetation to evaluate their ability to uptake selenium and indeed they were both quite effective in concentrating selenium in above-ground biomass (mean selenium content of kenaf = 0.632 ppm and canola = 0.834 ppm). While kenaf is not a good choice for phytoremediation projects in the Uncompahgre River Valley, it may be a very good choice for use in the Grand Valley of Colorado, where the growing season is longer.</p> <p>Overall reduction in soluble soil selenium in the test plots ranged between 2 and 6 percent, with the greatest reduction observed in the test plots on which tree variety OP-367 was grown.</p>



Award Fiscal Year	Project Title
	<p>Monitoring of long-term changes in water quality and watershed protection were not part of this project. However, the results of this project clearly show that plants and trees can remediate selenium and the process can operate over long periods of time with relatively little expense. In fact, if designed correctly, a woodlot or riparian buffer zone may actually generate economic returns to the landowner.</p>
<p><b>2004</b> Total Budget: \$58,916 NPS Funds: \$25,000</p>	<p><b><u>Coal Creek Watershed Planning, Town of Crested Butte</u></b></p> <p>The Coal Creek Watershed is located in Gunnison County, Colo., and is tributary to the Slate, East and Gunnison Rivers. The headwaters of the watershed lie in a remote and rugged mountain area that provides some of the richest recreational opportunities in the state. The area is prized for its water-based recreation, including fishing, boating and camping, and recreation is a major contributor to the local economy. The drinking water supply for the Town of Crested Butte is obtained from Coal Creek.</p> <p>The purpose of the project was to create a watershed management plan for the Coal Creek watershed where elevated levels for aquatic life have been found for cadmium, lead and zinc. The process identified data gaps, and a second grant has been awarded to resolve those data issues.</p>
<p><b>2002</b> Total Budget: \$343,026 NPS Funds: \$131,000</p>	<p><b><u>Massey Draw</u></b></p> <p>The major goal of this project was to implement the Chatfield Reservoir Total Maximum Daily Load by reducing phosphorus loading from bank and channel erosion and stormwater runoff into Chatfield Reservoir. The improvements to the channel of Massey Draw are complete, but the phosphorus reductions will not be determined until post-implementation monitoring is complete. Wetland and riparian habitat have been installed and growth is being established.</p>
	
<p><i>Pre-construction condition</i></p>	<p><i>Drop structures</i></p>

Award Fiscal Year	Project Title
<p><b>2002</b>  Total Budget:  \$100,644  NPS Funds:  \$56,000</p>	<p><b><u>Project 3ME</u></b>  The City of Boulder implemented Project 3ME:</p> <ol style="list-style-type: none"> <li><b>Mascot:</b> Bring nonpoint source pollution prevention messages to life through creation of a mascot that becomes the spokesperson for nonpoint source pollution prevention: H2O Jo and Flo.</li> <li><b>Message:</b> Develop a powerful message that focuses on the “tagline” (the “verbal” branding for the campaign) and serves as the continuity of the program’s message, tone, content and campaign strategy: “Keep it clean, ‘cause we’re all downstream.”</li> <li><b>Marketing Campaign:</b> The “Keep it Clean” CD Tool kit was developed. It includes campaign information, usage ideas and educational activities, along with customizable art files for campaign components such as stickers, tattoos, banners, notepads, brochures, tributary signs, movie ad slides, mascot images, bus and newspaper ads and more. The CD Tool kit was distributed to water educators, watershed groups and water providers statewide so they can use the materials in their respective communities.</li> </ol> <p>Updates to the H2O Jo and Flo campaign are found at <a href="http://www.npscolorado.com">http://www.npscolorado.com</a>.</p> <div style="text-align: center;">   </div>
<p><b>2000</b>  Total Budget:  \$141,303  NPS Funds:  \$77,295</p>	<p><b><u>Determining The Effects Of Changes In Land Use On Selenium Loading In The Whitewater Colorado Area</u></b>  In 1998, the Gunnison Basin Selenium Task Force, a group of private, local, state and federal interests, was formed to formulate approaches for reducing selenium concentrations in the Gunnison River basin. As a member of this group, the Mesa Soil Conservation District requested early in 2000 that baseline water-quality data be collected in streams in the vicinity of Whitewater. The objective of the data is to support assessment of the effects of expected increases in urbanization and irrigation on water quality, with special emphasis on selenium concentrations. Such an assessment is essential for evaluation of selenium-attenuation measures.</p> <p>Water-quality samples were collected at five surface-water sites and from three monitoring wells completed in the Mancos Shale. All of these sites were sampled for onsite measurements of temperature, specific conductance and pH; laboratory determinations of concentrations of major dissolved ions (sodium,</p>

Award Fiscal Year	Project Title
	calcium, magnesium, potassium, chloride, sulfate and alkalinity); dissolved fluoride; dissolved silica; dissolved nitrite plus nitrate; dissolved selenium; and bacteria ( <i>Escherichia coli</i> and fecal coliform). In addition, surface-water sites were measured for streamflow discharge.



**1999**  
 Total Budget:  
 \$158,000  
 NPS Funds:  
 \$94,800

**Cement Creek Mine Waste Control Project**  
 All mine wastes from the Galena Queen and Hercules mine sites were removed and placed in a permitted repository. Since old transformer containers were on the site, soils were tested for polychlorinated biphenyls (PCBs) in close proximity of the transformer location. The PCB analysis indicated there were no PCBs on site. The site was reconstructed leaving historical structures intact. Revegetation efforts established 50 percent ground cover in what had been a large kill zone. The slopes that contained mine wastes were left as talus slope to simulate historic mine dumps; therefore, revegetation of these slopes was not implemented.  
 A comparison of pre-remediation to post-remediation water quality at both high and low flows indicates significant water quality improvements have resulted.

**1995**  
 Total Budget:  
 \$35,000  
 NPS Funds:

**Cherry Creek Reservoir Nutrient Enrichment Assessment**  
 Cherry Creek Reservoir is included on Colorado’s 303(d) list, due to non-attainment of the site-specific chlorophyll-a standard and potential degradation of water quality. The listing is a driving force behind the completion of special

Award Fiscal Year	Project Title
\$35,000	<p>studies as outlined in the Water Quality Control Commission <i>Control Regulation No. 72 - Cherry Creek Reservoir Control Regulation</i> (5 CCR 1002-72). The reservoir experiences dense blooms of phytoplanktonic algae, especially <i>Aphanizomenon flos-aquae</i>, during the growing season.</p> <p>Data was collected on eight dates between May and October 2003. The study involved collection of data on temperature and oxygen, nutrient concentrations, algal biomass (measured as chlorophyll <i>a</i>), and abundances of individual species of algae. Vertical profiles of temperature and oxygen showed that the lake stratifies only briefly during the growing season.</p> <p>Nutrient samples taken from the upper water column during the growing season had very low concentrations of inorganic nitrogen, but relatively high concentrations of total dissolved phosphorus, suggesting the possibility of nitrogen deficiency. Enrichment evaluations consistently showed that the phytoplankton were nitrogen-deficient, i.e., that algal biomass during the growing season of 2003 was determined by nitrogen and not by phosphorus.</p> <p>Estimates of the threshold for phosphorus limitation in phytoplankton biomass indicate that removal of at least half (30 micrograms/ liter (<math>\mu\text{g/L}</math>) of the total phosphorus in the upper water column would have been necessary to induce phosphorus limitation of phytoplankton growth during year 2003. Until this threshold of phosphorus limitation is reached, incremental phosphorus control cannot be expected to suppress phytoplankton biomass in the reservoir.</p>
<p><b>1995</b>  Total Budget:  \$40,000  NPS Funds:  \$40,000</p>	<p><b><u>Cherry Creek Reservoir Groundwater Seepage Sampling</u></b></p> <p>A study was conducted on Cherry Creek Reservoir to make estimates of groundwater seepage to the reservoir. Estimates were made of seepage contributions to Cherry Creek Reservoir by direct measurement methods and by mass-balance analysis of conservative ions. Direct measurements showed that seepage occurs primarily in shallow water between Cherry Creek and Cottonwood Creek over an area of approximately 90 acres, as shown by use of seepage meters and piezometers. A zone of very intensive seepage occupies approximately 1.5 acres within this seepage zone. In addition, seepage occurs in the wetland just above the lake shore where Cherry Creek and Cottonwood Creek enter the reservoir.</p> <p>The seepage load of phosphorus to the reservoir is 524 kg (1,155 lbs.), or about 50 percent as high as the point source allocation for the reservoir; it is a previously unquantified component of phosphorus load to the reservoir. The seepage load of phosphorus is about eight 8 percent of the maximum annual load recognized by the Water Quality Control Division.</p> <p>This information, combined with the nutrient enrichment assessments, will be used to update the total maximum annual load for Cherry Creek Reservoir.</p>



## **IV. Water Quality Information**

### **Sampling and Assessment Activities**

Part of the update to the NPS Management Program was to reaffirm Colorado 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. NPS funds may be used only 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, when identified as a priority 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 also is 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.

### **SB90-126 Agricultural Chemicals and Groundwater Protection**

The Agricultural Chemicals and Groundwater Protection Program is administered as a joint effort between the Colorado Department of Agriculture, the Colorado Department of Public Health and Environment, and Colorado State University Cooperative Extension. Due to a difference in annual reporting, the following reflects activities in 2004.

#### **Groundwater Monitoring**

- ◆ continued the long-term monitoring project in the Weld County portion of the South Platte River Basin, a high priority watershed for the program’s efforts. The program sampled 19 monitoring wells and 63 irrigation and domestic wells
- ◆ completed the monitoring portion of the comprehensive program report, a 12-year summary report on all program work to date
- ◆ completed the installation of a network of dedicated monitoring wells in the Arkansas Valley in May 2004
- ◆ completed the new Arkansas Basin monitoring wells in August 2004, which were sampled in September 2004
- ◆ set up an urban monitoring well network along the Front Range urban corridor utilizing existing monitoring wells, to be used in a water quality study in 2005
- ◆ developed a long-term monitoring plan as a guide to program sampling efforts for the next five years
- ◆ completed a statistical analysis on the Weld County monitoring network to look for trends in the nitrate and pesticide data

- ◆ assisted in the upgrading and refinement of a database for the program’s groundwater monitoring data; assisted in the design for a geographic information system interactive database
- ◆ cooperated with the U. S. Geological Survey, National Water Quality Assessment Program for Phase II of the South Platte Survey
- ◆ collaborated with the Department of Agriculture Standards Laboratory to revise and refine the laboratory analysis used on all groundwater samples; evaluated the pesticide survey data to extract information needed to improve laboratory analysis
- ◆ addressed groups throughout Colorado on the Groundwater Program and issues related to agricultural chemicals and groundwater quality, including chemical dealers, groundwater management districts, crop and livestock producers, and agency personnel
- ◆ distributed fact sheets and reports on Colorado groundwater quality to interested parties and fielded questions by phone and e-mail from Colorado citizens
- ◆ cooperated with county Cooperative Extension agents on disseminating information about Colorado groundwater quality
- ◆ worked to coordinate efforts of the Agricultural Chemicals and Groundwater Protection Program with other state and federal programs in Colorado
- ◆ cooperated and provided assistance to the South Platte best management practice workgroup

**South Platte alluvial aquifer long-term monitoring**

In 2004, the program completed the 10th year of a long-term monitoring effort in the South Platte alluvial aquifer from Brighton to Greeley. The long-term monitoring network was established in 1995 and is a combination of three types of wells designed to sample a complete cross-section of the aquifer. The network well types are

- 20 dedicated monitoring wells operated by the Central Colorado Water Conservancy District;
- 60 irrigation wells that were previously sampled in 1989, 1990, 1991 and 1994;
- 18 domestic wells first sampled in 1992.

The monitoring and irrigation wells are sampled each year; the domestic wells every three years.

**TABLE 4. WELD COUNTY NITRATE MONITORING**

	<b>Monitoring Wells</b>	<b>Domestic Wells</b>	<b>Irrigation Wells</b>
<b>Number of wells sampled</b>	19	10	53
<b>Mean</b>	20.0	11.7	15.9
<b>Median</b>	14.7	9.0	14.3
<b>Standard deviation</b>	23.2	10.5	9.8
<b>Minimum</b>	3.6	1.6	0.05
<b>Maximum</b>	110	35.3	37.2

*Note: all values are Nitrate as N (in milligrams per liter) except the number of wells.*

Pesticide results for the monitoring well portion of the network revealed three pesticides, Atrazine, Metolachlor and Clopyralid, present in well samples. The breakdown product of Atrazine, Deethyl Atrazine, also was detected. Atrazine was present in three wells and Deethyl Atrazine was present in six of the wells. Three wells contained both triazine compounds. Metolachlor and Clopyralid were each detected in other wells. The total number of wells with a

pesticide detection was eight of the 19 sampled (42 percent). Detection levels ranged from 0.16 for Atrazine to 1.96 ug/L (ppb) for DEA. No pesticide was detected at a level that exceeds the applicable standard.

The 2004 annual report for the Agricultural Chemicals and Groundwater Protection Program may be obtained by contacting the program at (303) 239 -5704.

## V. Outreach Activities

### 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 **A**nd 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 \$10,000 from the regular Section 319(h) allocation for small, highly focused educational efforts. In 2001, with the concurrence of the EPA regional office, the amount available was increased to \$30,000, with the intent of expanding the area of influence into the other categories of the program. These small-scale projects typically leverage the modest amounts of money into major community-outreach efforts with statewide transferability. Fund availability is marketed to schools, nonprofit organizations and local watershed groups. Organizations that are members of the Colorado Nonpoint Source Council are not eligible to apply. A total of \$17,038 was awarded in 2005.

**TABLE 5: OUTREACH GRANTS AWARDED IN 2005**

<b>Name</b>	<b>Sponsor</b>	<b>\$ Request</b>
“Keep It Clean” outreach booth	City of Boulder and Watershed Approach to Stream Health	\$5,000
CACD Teacher’s Conservation Workshop 2005 – Traditions and Transitions	Colorado Association of Conservation Districts	\$3,600

<b>Name</b>	<b>Sponsor</b>	<b>\$ Request</b>
Animas River Watershed Planning Seed Grant Proposal	San Juan Resource Conservation and Development Council	\$4,988
A Ride Through the Storm Drain: The Adventures of H2O Jo	City of Boulder and Watershed Approach to Stream Health	\$3,450

### **Nonpoint Source Forum 2005**

The Nonpoint Source Forum 2005 “Colorado’s Watershed Cookbook: Recipe for a Watershed Plan” was held on September 7, 2005, in conjunction with the sixth annual meeting of the Colorado Watershed Assembly. The Forum was held as a work session at which local stakeholders began the process of developing a watershed plan. A standard outline for watershed plans in Colorado was provided to attendees, along with a step-by-step workbook.

The 2005 Hall of Fame awards were presented to three individuals:

1. Colleen Williams, James Creek Watershed Initiative, for work on the restoration of the James Creek and Left Hand Watersheds
2. Leigh Ann Vradenburg, Willow Creek Reclamation Committee, for work to restore the Willow Creek Watershed near Creede
3. Curry Rosato, City of Boulder, for work related to the creation of H2O Jo and Flo and the “Keep it Clean” campaign

## **VI. Federal Consistency**

Federal agencies own, manage or otherwise influence a significant portion of Colorado’s land area. In fact, nearly 37 percent of the surface 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?

Reviews of the U.S. Forest Service and the Bureau of Land Management offices originally scheduled for 2004 were rescheduled to federal fiscal year 2005, as noted below.

**TABLE 6. FEDERAL CONSISTENCY REVIEW SCHEDULE**

<b>Year</b>	<b>Forest Service/Bureau of Land Management Office</b>	<b>Schedule</b>
2000	Routt National Forest San Juan Field Office	Sept 25 – 26, 2000 June 6, 2001
2001	Grand Mesa, Uncompahgre, and Gunnison National Forest Grand Junction Field Office Uncompahgre Field Office Gunnison Field Office	July 24 – 25, 2001
2002	Arapaho-Roosevelt National Forest Pawnee National Grasslands Little Snake Field Office White River Field Office Kremmling Field Office	August 12 – 15, 2002 August 12 – 15, 2002 August 5 – 8, 2002 August 5 – 8, 2002 August 5 – 8, 2002
2003	Rio Grande National Forests San Juan National Forests La Jara Field Office Saguache Field Office	July 7 – 10, 2003 July 7 – 10, 2003 August 4 – 6, 2003 August 4 – 6, 2003
2004	White River National Forest Pike and San Isabel National Forests Comanche National Grasslands Royal Gorge Field Office Glenwood Springs Field Office	Spring 2005 November 8, 2004 November 9 – 10, 2005 November 9, 2004 July 12 – 13, 2005

## **VII. Federal Agency Contributions to NPS Management in Colorado**

### **U.S. Bureau of Land Management**

#### **Water Resources Inventory and Monitoring (Sites)**

Approximately 330 units of inventory and 800 units of monitoring work were completed. These numbers appear high, but each water quality parameter (e.g., pH, specific conductance, metals, etc.) measured counts as one unit. At abandoned mine land sites, a suite of parameters are analyzed, but typically only a few parameters are collected at each site.

Water resources inventory and monitoring occur while staff members conduct proper functioning condition surveys or watershed-based land health assessments. A comprehensive seeps and springs inventory is occurring out of the San Juan Public Lands Center to determine if coal bed methane development is de-watering seeps, springs or streams. The U.S. Geologic Survey is assisting with synoptic sampling.

Approximately 33,000 acres of soil survey work occurred in the Gunnison Gorge National Conservation Area.

Air quality monitoring was conducted by the Durango office near coalbed methane gas development.

#### **Lake/Wetland Inventory (acres) and Stream/Riparian Inventory (miles)**

The purpose of the inventory work is to determine aquatic system and/or fisheries habitat conditions and/or functionality. Field offices utilize the *Proper Functioning Condition* guidance,

and to a lesser degree, Rosgen and Pfancuck guidance. Approximately 3,900 acres of wetland area inventories were completed.

The purpose of the stream/riparian inventory is to collect water quality, aquatic, fisheries or riparian habitat information to better understand these areas. Approximately 7,000 acres of wetland habitat were monitored, and approximately 650 miles of stream and riparian habitat were monitored in 2005.

### **Watershed-based Land Health Assessments**

Approximately 1.32 million acres were assessed for the five public land health standards: soils, water quality, riparian, plant and animal communities, and special status/threatened and endangered species. Typically, an interdisciplinary team of specialists carries out this work. Most offices have analyzed at least half of their acreage and several are nearly done.

### **On-the-ground Projects**

Approximately 1,000 feet of the San Miguel River near Placerville, Colorado, was stabilized by installing Rosgen J-hooks, armoring stream banks with a combination of rock, mulch and willow plugs. (See below.) The river was cutting into the scenic highway.

Figure 1. San Miguel River restoration



Cooperative research efforts with the U.S. Geological Survey are occurring in the Gunnison Gorge National Conservation Area and the Badger Wash watershed (near Mack, Colo.) to analyze vegetation, rainfall runoff, erosion and the interactions of these processes on Mancos Shale landscapes. The focus in Badger Wash is grazing impacts and off-highway vehicle use in the Gunnison Gorge National Conservation Area.

Soap Creek restoration project is continuing with Rosgen channel surveys, removal of grazing in the area and work with the local water users. Increases in water releases from upstream have affected channel stability.

Approximately 50 wetland/stream/riparian projects were completed. Activities include riparian exclosures, plantings, weed eradication and reservoir improvements. Focus areas are Government Creek, west Badger Creek, Rio Grande River (San Luis Valley), and the “6&50” Reservoir in the Colorado Canyons National Conservation Area. Russian knapweed, tamarisk and houndstongue are problematic along some stream reaches, and approximately 85 miles were treated.

Abandoned mine land clean up and monitoring efforts are focused in the Lake Fork Gunnison, Lake Fork (Arkansas) and upper Animas watersheds.

### **U.S. Department of Agriculture Forest Service**

The basic direction for 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 2509.25-99-3). 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 2005, there were only two fires on National Forest System lands in Colorado, Mason Gulch and Craig Draw, that required burned area emergency rehabilitation treatments, for a total of \$490,000. In addition, National Forests spent \$503,000 to continue work on fire areas that burned in the previous three years, including continued work on the Hayman Fire and Missionary Ridge Fire. Treatments include seeding, mulching, upslope treatments such as log and/or straw erosion barriers, road reconstruction, drainage structure improvements, noxious weed treatments and emergency warning systems. A total of 6,312 acres were seeded in 2005.



### **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 590 acres of soil and water improvements in 2005.

### **Road Maintenance**

The regular road maintenance program includes inventory for maintenance needs, actual maintenance of roads to improve functionality and reduce resource damage, and road decommissioning. Road decommissioning encompasses a range of activities, 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 about 4,916 miles of road maintenance and another 39.5 miles of road decommissioning in 2005.

In addition, the Rio Grande National Forest hosted a “Roads Scholar” workshop attended by 56 county equipment operators. This workshop provided instruction on reducing “over width” traveled ways, reducing “entrenchment,” and replacement of the material bladed off the road in the past to increase roadbed elevation. Reducing the “footprint” of the road prism helps reduce erosion and sedimentation from the road by decreasing the compacted area and improving road drainage.

### **Road and Trail Deposit Fund**

A portion of the receipts generated from activities (timber sales, special use permit fees, etc.) on National Forest lands are redistributed back to the National Forests to be used for restoration projects to reduce erosion and sediment from roads and trails, improve passage of aquatic organisms at crossings and improve forest health. In 2005, approximately \$168,000 of these funds were used on the Grand Mesa, Uncompahgre, and Gunnison National Forests and Pike and San Isabel National Forests to repair a bridge foundation and improve 5.5 miles of road.

### **Abandoned Mine Program**

National Forests in Colorado initiated and/or completed restoration work on seven abandoned mine projects in 2005. This work consisted primarily of work around 37 old mine shafts and adits and reconstruction of 1.5 miles of road to reduce acid mine drainage and sediment delivery to nearby stream channels.

### **U.S. Geological Survey**

The U.S. Geological Survey’s (USGS) mission is not to protect water quality; however, the 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

## Recent Relevant USGS References Available Online

<http://co.water.usgs.gov/Pubs/index.html>

### 1. Fact Sheets

[Fact Sheet 2004-3066](#)

Ground-Water Quality of Granitic- and Volcanic-Rock Aquifers in Southeastern Park County, Colorado, July-August 2003

*By Roderick F. Ortiz*

[Fact Sheet 2004-3065](#)

Ground-Water Quality of Alluvial and Sedimentary-Rock Aquifers in the Vicinity of Fairplay and Alma, Park County, Colorado, September-October 2002

*By Roderick F. Ortiz*

[Fact Sheet 2004-3127](#)

Wastewater Chemicals in Colorado's Streams and Groundwater

*By Lori A. Sprague and William A. Battaglin*

[Fact Sheet 2004-3009](#)

Potential Effects of Individual Sewage Disposal System Density on Ground-Water Quality in the Fractured-Rock Aquifer in the Vicinity of Bailey, Park County, Colorado, 2001-2002

*By Daniel L. Brendle*

### 2. Data Series

[DS109](#)

Streamwater Quality Data from the 2002 Hayman, Hinman, and Missionary Ridge Wildfires, Colorado, 2003

*By Anthony J. Ranalli and Michael R. Stevens*

### 3. Investigations Series

[SIR 05-5151](#)

Mass Loading of Selected Major and Trace Elements in Lake Fork Creek near Leadville, Colorado, September-October 2001

*By Katherine Walton-Day, Jennifer L. Flynn, Briant A. Kimball, and Robert L. Runkel*

[SIR 05-5214](#)

Surface Water-Quality and Water-Quantity Data from Selected Urban Runoff-Monitoring Sites at the Rocky Mountain Arsenal, Commerce City, Colorado, Water Years 1988–2004

*By John D. Gordon, Donald E. Schild, Joseph P. Capesius, and Cecil B. Slaughter*

[SIR 05-5054](#)

Quantification and Simulation of Metal Loading to the Upper Animas River, Eureka to Silverton, San Juan County, Colorado, September 1997 and August 1998

*By Suzanne S. Paschke, Briant A. Kimball, and Robert L. Runkel*

[WRI 03-4219](#)

Ground-Water Quality Beneath Irrigated Agriculture in the Central High Plains Aquifer, 1999-2000

*By Breton W. Bruce, Mark F. Becker, Larry M. Pope, and Jason J. Gurdak*

[SIR 04-5289](#)

Effects of Surface Applications of Biosolids on Soil, Crops, Groundwater, and Streambed Sediment near Deer Trail, Colorado, 1999-2003

*By Tracy J.B. Yager, David B. Smith, and James G. Crock*

[SIR 05-5150](#)

Summary and Evaluation of the Quality of Stormwater in Denver, Colorado, Water Years 1998-2001

*By Clifford R. Bossong, Michael R. Stevens, John T. Doerfer, and Ben R. Glass*

[SIR 04-5290](#)

Distribution and Mass of Nitrate in the Unconfined Aquifer Beneath the Intensively Cultivated Area North of the Rio Grande, San Luis Valley, Colorado, 1997 through 2001

*By Robert W. Stogner, Sr*

# Appendix A: Project Proposal Process for 2005

## ***Priority Project Categories***

(Excerpted from *FY 2005 Guidance for Prospective Sponsors*)

Within the context of the NPS Management Program, the following priority project categories are identified for 2005 funding:

### **1. Nonpoint source activities in watersheds impacted by Section 303(d) listed waters.**

These proposals are to develop and implement watershed-based plans that address nonpoint source impairments in watersheds that contain Section 303(d)-listed waters.

- On-the-ground projects in this category must have a watershed-based plan before funds can be used for implementation. Each plan must address the nine watershed planning elements found in EPA's "Nonpoint Source Program and Grants Guidance for 2004."
- Projects to develop watershed-based plans are limited to no more than \$25,000 NPS funds per planning proposal.
- Monitoring projects related to 303(d)-listed waters must be coordinated with the Water Quality Control Division prior to submittal.

Projects proposed in this category must be consistent with the Water Quality Control Division's efforts to meet total maximum daily load program requirements. Prospective sponsors should contact the appropriate watershed coordinator or nonpoint source coordinator to discuss potential TMDL projects.

Proposals in this category may address any of the major nonpoint source categories identified in Colorado: abandoned or inactive mining, agriculture, hydrologic modification, silviculture, construction runoff and urban runoff.

Approximately \$1,200,000 is targeted for this category; a minimum of \$100,000 will be set aside for development of watershed-based plans.

### **2. Watershed planning in non-303(d)-impacted watersheds.**

Watershed planning is the heart of effective on-the-ground implementation. Planning provides an opportunity for stakeholders to compile their interests, data, priorities and strategies to address the goals of their watershed, which are not limited necessarily to solving a nonpoint source problem.

A watershed plan developed with nonpoint source funding should lead to prioritized implementation of best management practices to restore water quality or prevent impairments. Products of these proposals must conform to the guidance outlined by EPA in its "Nonpoint Source Program and Grants Guidance for 2004."

Approximately \$100,000 is targeted for watershed planning in non-303(d)-impacted watersheds, with a maximum grant of \$25,000 for each planning project.

### 3. Other proposals.

Projects that address specific action items in any of the six chapters of the *Colorado Nonpoint Source Management Program (January 2000)* also may be proposed. These proposals may include prevention projects or other watershed efforts where the target water body is not identified on the *List of Waters Still Requiring TMDLs* (303(d) list), or they may address information/education needs of the program, as related to the action items.

- On-the-ground projects must be described in the context of their watershed, and include, to the extent possible, a quantified description of the water quality values to be protected. Values may include aquatic life health and habitat needs, drinking water source protection or recreational use of the water body. If water quality data do not exist, surrogate descriptors of the water quality problem may be used upon consultation with the division.
- On-the-ground proposals also must describe the water quality improvements or protection expected from the completion of the project. Possible descriptions may include, but are not limited to, pollutant load reductions, changes in pollutant concentrations or increases in numbers of age classes for fish species.
- Projects intended to reduce sediment loads in streams should use the Water Quality Control Commission Policy 98-1, "[\*Implementation Guidance for Determining Sediment Deposition Impacts to Aquatic Life in Streams and Rivers \(as intended for higher gradient cobble-bed, coarse-grained streams\)\*](#)" to evaluate the impact sediment has on the attainment of aquatic life uses.

The amount targeted for the "Other Proposals" is approximately \$680,000.



## ***Summary of Schedule and Process***

*(Excerpted from 10/13/2004 letter to potential project sponsors)*

Deadline for submitting a 2005 proposal is November 15, 2004. Please refer to the document *Colorado Nonpoint Source Program, FY 2005 Grant Opportunity* for specific guidance on the types of projects eligible for 2005.

All project sponsors are strongly encouraged to meet with the appropriate nonpoint source committee before the deadline. Committees will provide technical and programmatic advice on each proposal, including appropriateness for NPS funding. Committees also will provide the final criteria that will be used by the Nonpoint Source Council to evaluate proposals and make its funding recommendation in February.

### **Committee Meeting Schedule**

**Agriculture – Silviculture Committee:** October 21, 2004, 9 a.m. – noon, 2nd Floor West Conference Room, National Agricultural Statistics Service, 655 Parfet Street, Lakewood. Contact Randal Ristau, 303-692-3571

**Hydrologic Modification Committee:** Will be scheduled as necessary. Contact Laurie Fisher, 303-692-3570, if you are proposing a hydrological modification project.

**Information and Education Committee:** October 13, 2004, 9 a.m. – noon, Red Fox Room, Division of Wildlife, 6060 Broadway, Denver. Contact Loretta Lohman, 720-913-5285

**Mining Committee:** October 20, 2004, 9 a.m. – noon, Centennial Building, 1313 Sherman Street, Denver. Contact Julie Annear, 303-866-3567

**Stream Restoration Committee:** October 14, 2004, 9 a.m. – noon, Bureau of Land Management, 2850 Youngfield, Lakewood. Contact Ed Rumbold, 303-239-3722

**Urban and Construction Committee:** November 1, 2004, 9 a.m. – noon, Urban Drainage and Flood Control District, 2480 W. 26th Avenue, Denver. Contact Russ Clayshulte, 303-751-7144

### **Remaining schedule**

**November 15, 2004:** deadline to submit proposals to the Water Quality Control Division, 5:00 p.m.

**December 2004 and January 2005:** Committees of the Nonpoint Source Council will meet to discuss proposals; dates to be determined. Please check the Web site or call for specific dates in December and January.

**January 20, 2005:** Colorado Nonpoint Source Council will evaluate proposals and provide a funding recommendation to the Water Quality Control Division. Sponsors will not make a presentation this year.

**February 2005:** Water Quality Control Division and Nonpoint Source Council present funding recommendation to Water Quality Control Commission

**February 15, 2005 and beyond:**

1. Approved project sponsors develop project implementation plans and submit to Water Quality Control Division.
2. Water Quality Control Division will submit project implementation plans to the Environmental Protection Agency for approval.
3. EPA will develop biologic evaluations for each on-the-ground project as it receives the project implementation plans, to fulfill its Section 7 Endangered Species Act consultation requirements.
4. EPA approves project implementation plans and awards grants funds on a project-by-project basis.
5. Water Quality Control Division will begin contracting with each project sponsor as EPA approves each project implementation plan and awards the funds.

Because of the overall application schedule, sponsors should plan their project start dates no earlier than September 2005. Adjustments to the planned start date can be made as the process progresses, as necessary.

***FY 2005 Nonpoint Source Grant Proposal Scoring Criteria***

	Below Expectations	Meets Expectations	Exceeds Expectations
<p><b>1. Problem Statement:</b> <i>Note: This criterion will be weighted at 2X.</i>            What is the water quality problem? Is it a listed problem on the 303(d) list? For on-the-ground projects, the proposal should document the problem, using relevant data, both in the watershed and at the site of the proposed work.</p> <p>For information/education projects, the proposal should identify the target audience, its need for the information or education and the information or education gap or program need or requirement that will be filled by the project.</p>			
<p><b>2. Meet Colorado NPS Program Goals:</b> <i>Note: This criterion will be weighted at 2X.</i>            Do the problem and the proposed project address one or more goals and objectives identified in the Colorado Nonpoint Source Management Program?</p>			
<p><b>3. Conceptual Approach:</b>            How is the water quality problem going to be addressed? What is the goal of the project? Is the project-approach concept in the proposal appropriate for the water quality problem, in that particular watershed, at that particular site? Will this project result in improved water quality?</p> <p>For information or education projects, define how the target audience will be reached and why this approach can succeed.</p>			
<p><b>4. Technical Approach:</b>            What is the technical approach that will be used? Is the technical approach sound relative to aspects of engineering, ecology, communications, etc., whichever are applicable? Are the tasks relevant? Is there an expectation the approach will result in changes to benefit water quality?</p> <p>For information or education projects, what is the approach that will be used? Is the proposed approach sound relative to aspects of communication? Are the tasks relevant? Is there an expectation the approach will result in behavior changes to benefit water quality?</p>			

	Below Expectations	Meets Expectations	Exceeds Expectations
<p><b>5. Sustainability:</b> How long will the water quality improvements gained by this project last? Will this project produce lasting, positive improvements to water quality or public attitudes? Will this project be self-sustaining after this grant, i.e., is the sponsor willing to continue this effort after the end of the project? Is there recognition of life after the project?</p> <p>Can the water quality improvements or other success measures achieved by this project be sustained (10 plus years)? Is there a commitment to maintain the best management practices implemented in this project? Have long-term funding plans been developed for the operation and maintenance and monitoring of restoration activities or best management practices implementation?</p> <p>For information or education projects, what is the life expectancy of the project (how long will the information/education effect last) versus how long it is needed to last? If needed, will the outreach/education activities be continued after the funding period ends?</p>			
<p><b>6. Partnerships:</b> Is there evidence of appropriate partnerships and degree of commitment, both now and into the future? Are resources leveraged effectively to accomplish the project (people, money, equipment, etc.)?</p> <p>For information or education projects, identify existing efforts and how they will be leveraged or how this effort complements them.</p>			
<p><b>7. Evaluation:</b> <i>Note: this criterion will be used as a tiebreaker, if necessary.</i> Does the proposal have measurable goals and objectives? Does the proposal include an appropriate plan or strategy for evaluating the success of the project, to determine if the project goals and objectives have been met?</p> <p><i>(Note: There can be a difference between evaluating success of the project and measuring water quality improvements; it may be appropriate for a project to do both.)</i></p>			

	Below Expectations	Meets Expectations	Exceeds Expectations
<p><b>8. Monitoring:</b> <i>Note: this criterion will be used as a tiebreaker, if necessary.</i></p> <p>How will the project show that it has improved or protected water quality from nonpoint sources?</p> <p>For information or education projects, how will the project demonstrate increased knowledge, skills or behavioral changes in the target audience that are connected to improving water quality?</p>			
<p><b>9. Funding:</b></p> <p>Is the budget appropriate for the project? Are nonpoint source funds the best source of funding for this project?</p>			
<p><b>10. Match:</b></p> <p>Is the proper amount and type of match identified? Does the project leverage the NPS funds with matching funds? Is the project overmatched?</p>			

**Projects Approved for Funding in 2005**

Projects highlighted in bold below address waterbodies identified in Colorado's 2004 *List of Waters Still Needing TMDLs* (303(d) list).

<b>Project Title</b>	<b>Sponsor/Contractor</b>	<b>Project Purpose</b>	<b>Grant Awarded</b>
<b>Barr-Milton Reservoir Watershed Plan</b>	South Platte Coalition for Urban River Evaluation	Develop and implement a watershed plan, including a TMDL	\$301,900
Rio Grande Watershed Restoration Strategic Plan	Rio Grande Headwaters Restoration Project and San Luis Valley Water Conservancy District	Complete a watershed plan to prioritize individual restoration actions	\$25,000
<b>Reclamation of the Amethyst Waste Dump and Pilot Test for Nelson Tunnel Dewatering</b>	San Luis Valley Resource Conservation and Development for the Willow Creek Reclamation Committee	1. Reduce metals loads to Willow Creek by reclaiming mine waste near the Amethyst Mine 2. Conduct dewatering test on the Nelson Tunnel to evaluate possible treatment options	\$197,723
City of Aspen Stormwater Water Quality Enhancement Project	City of Aspen	Install storm water structures to control sediment within the City of Aspen and protect the upper Roaring Fork River	\$150,000
<b>Anglo Saxon/Porcupine Mine Assessment and Characterization</b>	Anglo Saxon Properties, Limited	Evaluate the underground workings of these mines to locate infiltration sites and determine appropriate best management practices to implement	\$14,022

<b>Project Title</b>	<b>Sponsor/Contractor</b>	<b>Project Purpose</b>	<b>Grant Awarded</b>
NPS Statewide Outreach	Colorado Foundation for Agriculture	Conduct a statistically valid survey to quantify current water quality knowledge in Colorado; produce a newspaper insert on NPS issues for the major papers in Colorado	\$155,000
<b>Coordinated TMDL Development in the Snake River Watershed</b>	Northwest Colorado Council of Governments	Develop the TMDL for the Snake River in Summit County	\$40,500
Statewide Land Use Decision Maker Education Program Continuation	League of Women of Colorado Education Fund	Continue AWARE Colorado ( <u>A</u> ddressing <u>W</u> ater <u>A</u> nd natural <u>R</u> esource <u>E</u> ducation) a statewide program to educate local decision makers about the impacts of land use decisions on water quality	\$127,350
"Keep it Clean" Neighborhood Water Stewardship Program	Watershed Approach to Stream Health (WASH) Project	eEngage community residents in water protection activities that help them take the necessary actions to reduce NPS pollution in their community	\$25,000



<b>Project Title</b>	<b>Sponsor/Contractor</b>	<b>Project Purpose</b>	<b>Grant Awarded</b>
Colorado Animal Feeding Operation Program continuation	Colorado Livestock Association	Reduce the water quality and public health impacts from animal feeding operations in Colorado. The Animal Feeding Operations Program focuses on providing technical help and cost-share assistance to animal feeding operations owners	\$134,388
Outreach mini-grant (not an evaluated project)	Various	Small grants (up to \$5,000) for outreach or watershed start-up projects	\$25,000
<b>Culebra Watershed Plan</b>	Colorado Acequia Association	Develop a watershed plan	\$25,000
<b>Assessment of Metal Contamination and Toxicity . . . Lefthand Creek</b>	Lefthand Watershed Oversight Group	Assess locations and impacts of intermittent sources of toxic metals contaminating the streams of the watershed	\$49,950
<b>Coal Creek Watershed Water Quality Monitoring Project</b>	Town of Crested Butte	Collection of water quality data to enable completion of watershed plan	\$44,760
<b>Coyote Gulch Restoration</b>	City of Lakewood	Reduce phosphorous and sediment loads to Bear Creek Lake by stabilizing Coyote Gulch	\$200,000

<b>Project Title</b>	<b>Sponsor/Contractor</b>	<b>Project Purpose</b>	<b>Grant Awarded</b>
Colorado Watershed Assembly Support	Colorado Watershed Assembly	Provide technical assistance to high priority watershed organizations; develop five-year strategy for the assembly	\$120,000
Colorado Department of Public Health and Environment Watershed Implementation	Water Quality Control Division	Implement watershed plan to restore streams to uses and standards	\$293,741