

CLEARING THE WATERS

Newsletter

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www.nmenv.state.nm.us/swqb/wps

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Second New Mexico Watershed Forum to be held in September

From the upper snowcapped peaks down to the agricultural fields and bosque floodplains, maintaining and improving the health of New Mexico's watersheds requires collaboration between individuals and groups. Please join us for the second New Mexico Watershed Forum "From Mountaintop to River Bottom: Teaming Up for Healthy Watersheds" at the Uptown Marriott in Albuquerque from September 28th-30th. Plenary sessions, workshops, and field trips over the course of three days will offer opportunities to examine and build upon the cooperative relationships that have led to successful watershed-based planning and restoration.

This statewide Forum aims to gather watershed professionals and group leaders, Tribe and Pueblo leaders, volunteers, contractors, soil and watershed conservation districts, students and faculty, and local, state, and federal agencies interested in improving the health of watersheds. The New Mexico Watershed Forum will provide opportunities to share successes, challenges, and innovations while networking and discussing watershed issues.



The 2008 Watershed Forum drew more than 300 participants representing over 115 different organizations.

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**NMED Surface Water Quality Bureau's
Watershed Protection Section**

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The keynote speaker for the first day of the Forum will be Jack Loeffler. Jack Loeffler is an aural historian, radio producer, writer, sound collage artist, humanities scholar, and lecturer. The keynote speaker for the second day of the Forum will be Bob Parmenter. Bob Parmenter is the Director of Science and Education for the Valles Caldera Trust in northern New Mexico, and is responsible for organizing and coordinating the scientific research, inventory and monitoring programs on the Valles Caldera National Preserve.

For registration information, see www.watershedforum.org. Questions or comments about the Forum can be addressed to: info@watershedforum.org.



Watercolor by Suzanne Otter

Watershed Planning Workshops at the Forum

By Chris Canavan, Southern NM Team Leader

All watershed restoration projects receiving Clean Water Act Section 319 funding in New Mexico are now required to have a watershed plan which defines the water quality problems and proposed solutions. These watershed plans must contain certain elements that address: pollutant source identification, pollutant loading, recommended best management practices (BMPs) to address the pollution, an estimate of technical and financial resources needed, education and outreach initiatives, an implementation schedule, project milestones, a set of criteria to measure project success, and a monitoring component. Given the complexities of this process, the New Mexico Environment Department will be presenting four workshops on watershed planning at the Watershed Forum to assist stakeholders in addressing nonpoint source pollution through 319(h) grant funding.



Workshop during 2008 Watershed Forum

These workshops will include examples of watershed plans that are in development, and the variety of approaches that are being employed to develop a good watershed plan. One workshop will present a general overview of the required elements of a 319 watershed plan, and the approach taken by a New Mexico watershed group. A critical component of the 319 watershed planning process is pollutant source identification, and estimating the load reductions. Since these two elements are the backbone of a watershed plan, one of the workshops will focus on identifying the pollutant sources, estimating the pollutant loading, and determining BMPs, while two workshops will demonstrate the use of specific models to estimate pollutant loads. The information will be suitable for all levels of watershed planning expertise and should provide a good foundation for 319 watershed planning in New Mexico.

The complete agenda is now posted at the Watershed Forum website (www.watershedforum.org) for more details.

Funding Awards

EPA Awards Over \$380,000 to Map and Classify Wetlands in New Mexico

The Environmental Protection Agency (EPA) has awarded \$386,847 to the New Mexico Environment Department (NMED). The funds will be used by NMED to map and classify wetlands in the Canadian River drainage, including playas and isolated wetlands in northeastern New Mexico. The funds will also be used to acquire imagery and assemble a geodatabase, conduct pre-and post-mapping field reviews, and develop a draft landcover classification for the project area.

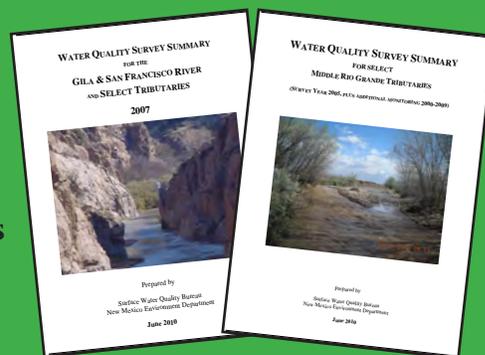
EPA Awards Over \$100,000 to New Mexico for Water Quality Management Activities

The Environmental Protection Agency (EPA) has awarded \$101,000 to the New Mexico Environment Department (NMED). The funds will be used to provide assistance to NMED with water quality management planning activities in the Middle Rio Grande and Cimarron River watersheds including the completion of water quality standards for these watersheds. The funding will also be used to develop strategies to reduce *E.coli* contamination in the Albuquerque Middle Rio Grande and for the water quality management planning project on Burn Lake.

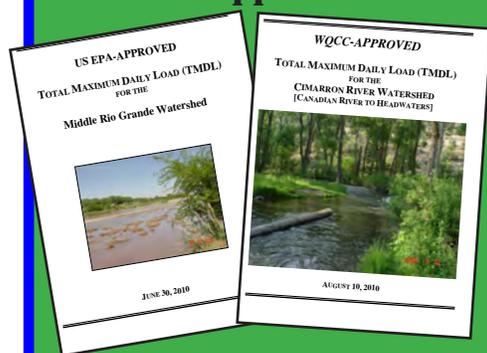
New Documents

New Water Quality Survey Summaries Available

The Monitoring and Assessment Section has released survey summaries for the Middle Rio Grande tributaries (from the 2005 survey) and the Gila & San Francisco Rivers tributaries (from the 2007 survey). www.nmenv.state.nm.us/swqb/MAS/



TMDLs Approved and Available



A package of thirteen integrated total maximum daily loads (TMDLs) for arsenic, bacteria, plant nutrients, and temperature in several distinct streams or stream segments within the Cimarron watershed was presented to the Water Quality Control Commission and approved at their regular meeting on August 10th, 2010. The Environmental Protection Agency (EPA) will review this TMDL package for final approval (www.nmenv.state.nm.us/swqb/Cimarron). EPA recently approved new TMDLs for The Middle Rio Grande Watershed (www.nmenv.state.nm.us/swqb/Rio_Grande/Middle).

A TMDL documents the maximum pollutant load that a river or stream can withstand and still meet standards, the loading the stream is currently experiencing, and a load reduction goal for the stream. Both the Cimarron and Middle Rio Grande watersheds have had other TMDLs approved in earlier years as well.

Technology Update

Low Impact Development in the Southwest

By Allie Canavan, student, University of Washington, College of the Environment

In undeveloped areas, stormwater from precipitation creates natural runoff patterns that flow into lakes, rivers, and oceans. As these areas become developed, these patterns are disrupted, but the stormwater still has to go somewhere which can lead to severe flood damage. Traditionally, developing areas construct infrastructure to reduce flooding from stormwater; however, most of this infrastructure drains water into gutters and storm drains that empty as quickly as possible to rivers, lakes, and oceans. Unfortunately, this urban runoff also carries pollutants from roads and sidewalks including pesticides, fertilizers, oil, trash, and pet wastes that can have serious negative impacts on aquatic ecosystems. Alternatively, if stormwater is able to infiltrate the ground, many of these pollutants break down into less harmful substances or are captured before being introduced into the groundwater. Low Impact Development (LID) practices are now being implemented in many urban areas to reduce flooding, improve water quality, increase the beneficial use of stormwater for irrigation, reduce the urban heat island effect, increase groundwater recharge, and maintain the effectiveness of floodwater distribution.

LID is effective in new development, reconstruction, and as retrofits in existing development. In other words, LID can be implemented almost anywhere at anytime to fit the needs of urban growth and development. Examples of LID methods used on a municipal level to reduce flooding and pollution include permeable pavements, green parking and highways, and vegetated swales that divert stormwater runoff into the surrounding soil. Rather than raising sidewalks, medians, and curbs, another approach is to lower them, allowing water to naturally irrigate adjacent landscapes. This type of infrastructure provides urban developments with natural growth and beautiful landscapes while reducing both flooding and impacts from nonpoint source pollutants.

Many different types of Green Infrastructure, practices that mimic natural processes to retain and use stormwater, are used around the world, and each location uses approaches suited to its specific environment. Urban developments that receive abundant precipitation like in the Pacific Northwest are able to collect rain water for non-potable use year round (toilet flushing is one of the more common uses) as well as utilize flat roofs as gardens called “green roofs.” Green roofs reduce the amount of runoff that goes into the streets while providing a space for urban gardening. Because the majority of the American Southwest does not receive much rainfall, it would seem improbable for a place like New Mexico to utilize many of these techniques. However, given the



A constructed swale turned park in Mesilla



Rain garden of native plants in Mesilla

area's scarce water resources and potential for flash flooding, it may be even more relevant to implement cost-effective approaches to water conservation and stormwater management.

Cities like Tucson, Arizona harvest water during their monsoon season for irrigation by using rain barrels or other storage systems, or by creating rain gardens. Rain gardens are depressions in landscapes that naturally harvest water providing a beautiful addition to the landscape, while also helping to reduce flooding, increase shade cover, and keep potential stormwater pollutants out of watercourses. If native and drought-tolerant vegetation (i.e. xeriscaping) are used in rain gardens, green parking, highways and swales, there should be little to no need for supplementary water further lowering maintenance costs. Cacti, yucca, sage and perennial flowers such as marigolds, sunflowers, and Mexican poppies all grow naturally in Southern New Mexico's driest climates and can provide beautiful additions to household and municipal landscaping. It is most important for urban areas in drier climates like those in New Mexico to conserve and protect both freshwater and potable drinking water. We use potable water to flush our toilets and water our plants, both activities that do not require purified water. By collecting stormwater runoff for one or both, thousands of gallons of clean water (and the energy used to purify and transport it) can be saved each year.

To find out more about Green Infrastructure, LID, rainwater harvesting and flood prevention, you can attend the "Green Infrastructure in the Southwest: Challenges & Opportunities" conference in Las Cruces on August 26th ([click here for website](#)) or the binational conference on "Green Approaches to Manage Storm and Reclaimed Water" in El Paso, Texas on September 23-24th, 2010 (www.epwu.org).

LID Websites of Interest

- Environmental Protection Agency (EPA) LID website www.epa.gov/nps/lid
- EPA's "Managing Wet Weather with Green Infrastructure" website http://cfpub.epa.gov/npdes/home.cfm?program_id=298
- New Mexico Office of the State Engineer www.ose.state.nm.us/publications_brochures.html
- Low Impact Development Center www.lowimpactdevelopment.org
- City of Tucson Water Conservation www.ci.tucson.az.us/water/harvesting.htm
- Water Environment Research Foundation www.werf.org/livablecommunities

Before starting any LID project, check with your local, state, and federal agencies to determine what regulations or guidelines might apply to your project.

Surface Water Quality Bureau Program Update

The Lower Rio Grande Program

By Dale Doremus, Project Coordinator

Problems associated with elevated salinity in the Río Grande from above Elephant Butte Reservoir, New Mexico, to Fort Quitman, Texas, have long been recognized and are increasing due to rapid urban growth and increasing water demand. Salinity increases from Elephant Butte Reservoir to Ft. Quitman, TX have been documented for more than 100 years, predating construction of the reservoirs, canals, and drains. Highly saline water results in reduced potable water supplies, smaller crop yields, and soil and groundwater deterioration.

New Mexico's Environment Department (NMED) and the Interstate Stream Commission (ISC) are working cooperatively to develop solutions to concerns regarding the quantity and quality of the water delivered to the State of Texas. NMED's Lower Rio Grande (LRG) Program has designed and implemented a salinity monitoring network from 2005 to present. The network is designed to improve understanding of salinity sources and the processes influencing salinity changes in the Río Grande from above Elephant Butte Reservoir at San Marcial, downstream to Courchesne Bridge near El Paso, Texas. The LRG Program conducts water quality investigations to identify sources of salinity; target salinity control solutions; and provide the technical basis for an effective salinity control program.



Recent university and government research have identified natural sources such as the upwelling of deep circulating groundwater and geothermal waters as the principal salinity contributors in the region. Additionally, these natural salinity inputs appear to be localized suggesting that source control and treatment may be feasible. In response to these findings, the multi-state Río Grande Salinity Management Coalition was formed to improve water quality in the New Mexico-Texas border region. The Coalition is composed of Texas, New Mexico, and Colorado state water agencies; irrigation districts; El Paso and Las Cruces water utilities; university researchers; and other interested state and federal agencies. The overall objectives of the Río Grande Project Salinity Management Coalition are to reduce salinity concentrations, mass loading, and impacts in the Río Grande Project area in order to increase usable water supplies for agricultural, urban, and environmental purposes in the critical New Mexico-Texas border region.

In 2009 NMED, ISC, and the US Army Corps of Engineers, on behalf of the Coalition, completed the first phase of a Water Resources Development Act Section 729 Río Grande Salinity Management Program which included a geospatial salinity database; a USGS Río Grande Salinity Assessment Study; and Río Grande Economic Impact Assessment study. With funding from both New Mexico and Texas, future phases will bring together existing information and develop a recommended strategy for moving forward with a salinity management program. This entails developing a baseline salinity budget, salinity impact assessments, and salinity management alternatives

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for specific areas as well as filling critical data gaps. The Coalition's goal is to identify specific potential pilot project areas in FY2010 and then begin feasibility assessment efforts in FY2011. Under the above schedule, the Coalition would seek to design and then begin construction of a pilot-scale project(s) starting in FY2012. Depending on the pilot project salinity control results and cost-effectiveness, other salinity control projects would be expanded along with continued monitoring and documentation of water quality improvements and salinity management benefits.

For more information, see: www.nmenv.state.nm.us/swqb/LowerRioGrande/ or email dale.doremus@state.nm.us.



USGS personnel Robert Henrion (left) and Pat Summers (right) collecting water quality samples and flow information at the Courchesne Bridge near El Paso, Texas as part of the 2010 USGS/NMED Surface Water Synoptic with emphasis on salinity concentrations and loads.

Río Grande Project Salinity Management Coalition Members

Rio Grande Compact Commissioners from Texas, New Mexico & Colorado
Texas Commission on Environmental Quality
Texas Water Development Board
New Mexico Interstate Stream Commission
New Mexico Office of the State Engineer
New Mexico Environment Department
Colorado Division of Water Resources
El Paso Water Utilities
Las Cruces Utilities Department
Elephant Butte Irrigation District
El Paso County Water Improvement Irrigation District No. 1
Hudspeth County Conservation and Reclamation District #1
New Mexico State University, Water Resources Research Institute
Texas A&M AgriLife Research and Extension Center
University of Texas at El Paso, CERM
New Mexico Department of Agriculture
US Bureau of Reclamation
US Geological Survey, NM & Texas Water Science Centers

GET INVOLVED!

See the events below for opportunities to learn about watersheds and how to restore them.

August 20-22nd - Albuquerque Wildlife Federation, Valles Caldera volunteer restoration weekend. For more information, see <http://abq.nmwildlife.org/>

August 26th - Green Infrastructure Conference "Green Infrastructure in the Southwest: Challenges & Opportunities." Ramada Palms, Las Cruces. <http://events.constantcontact.com/register/event?oeidk=a07e2xfpzng048f13c1&oseq=a002gb5ex267>

August 31st - Pecos Canyon Collaboration Meeting, 10am, Upper Pecos Watershed Association offices at 78 S Main St. Pecos. Check <http://pecoswatershed.org> for more details.

September 1-4th - 2010 Arizona Hydrological Society Symposium "Dryland Hydrology: Global Challenges Local Solutions." Westin La Paloma, Tucson, AZ www.eventinterface.com/hydrosymposium

September 16-19th - 6th Annual Gila River Festival "Celebrating the Gila's Web of Life." Silver City and surrounding area. www.gilaconservation.org/

September 17-19th - Albuquerque Wildlife Federation, Cebolla volunteer restoration weekend. For more information, see <http://abq.nmwildlife.org/>.

September 23-24th - Green Approaches to Manage Storm and Reclaimed Water A Binational Conference. Carlos M. Ramirez Tech2O Center, El Paso, TX. www.epwu.org

September 25th - Dia del Rio, 9:30am, meet at Bank of Pecos parking lot in Pecos. Check <http://pecoswatershed.org> for more details.

September 28-30th - New Mexico Watershed Forum "From Mountaintop to River Bottom: Teaming up for Healthy Watersheds." Uptown Marriott in Albuquerque. www.watershedforum.org

October 14-15th - Third Natural History of the Gila Symposium. Western New Mexico University, Silver City. <http://gilasymposium.org>

October 16th - Albuquerque Wildlife Federation, Cedro Creek volunteer restoration event and End of Season Celebration. For more information, see <http://abq.nmwildlife.org/>.

October 22-24th - Erosion Control Workshop. Double Circle Ranch, Eagle Creek Watershed, AZ. For more information, see <http://doublecircleranch.com/programs-at-the-double-circle-ranch/erosion-control-workshop/>.

October 26-28th - 15th Annual NM Infrastructure Finance Conference "Infrastructure 2010: Building Toward Sustainability" at Hotel Encanto de Las Cruces. www.nmenv.state.nm.us/cpb/InfFinCon

November 10-12th - Quivira Coalition Conference "The Carbon Ranch: Using Food and Stewardship to Build Soil and Fight Climate Change." Albuquerque. More information and registration online at www.quiviracoalition.org.

If you have an event that you would like posted, please email matthew.schultz@state.nm.us