

CLEARING THE WATERS

Newsletter

Volume 15, No.1

Spring 2010

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This newsletter is published quarterly by the Watershed Protection Section of the New Mexico Environment Department's Surface Water Quality Bureau. Funding provided by a CWA §319(h) grant from EPA.



Water Festival Celebrates 7th Year

Environmental Education Success in SW New Mexico

By Dave Menzie, Watershed Protection Section

More than a decade ago, Watershed Protection Section (WPS) staff located in Silver City became involved in environmental education with one local area school. WPS staff are generally not teachers by training, but do reach out to local educators by offering watershed information to help instill a greater scientific understanding of the environment. That initial effort combined with a strong community interest, a small amount of Clean Water Act Section 319 funds, and a modest EPA Five Star Grant has blossomed into a community sustained educational effort.

At the request of a middle school science teacher in 1998, WPS Silver City staff met a bus full of students at the Gila River. Groups of students rotated through activities on water quality, macroinvertebrates, stream flow measurements, channel substrate measurements, and other watershed ecology topics. Word soon got out to other area teachers that WPS staff would work with students in outdoor classroom settings, and more classes, schools, and organizations became involved.



4th grade students listen to a presentation at the 2nd annual Gila Water Festival on the WNMU campus.

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EDUCATION continued from page 1

In 2004, WPS staff, local individuals and organizations started the Gila Water Festival with a 319 grant. The entire Water Festival experience was intended to help students and their teachers in the Middle Rio Grande, Santa Fe, and other New Mexico communities understand that water is an essential and limited resource and what each of us can do to protect and conserve our water. Several hundred 4th grade students attended one day of activities and several hundred 5th grade students attended the following day. This spring the Gila Water Festival, also known as the Children's Water Festival, celebrates its 7th year involving approximately 400 students, 7 schools, 13 organizations/stations, and funded with a mixture of private and public sponsorships. The various organizations involved include: The Nature Conservancy, Gila National Forest, Wellness Coalition, Audubon Society, NM Environment Department, Grant County Rolling Stones Geological Society, Gila Resources Information Project, New Mexico Solar Energy Association, Town of Silver City, Silver City Museum, Aldo Leopold High School, and the Gila Conservation Education Center.



La Plata Middle School teacher and students performing a pebble count and another group of students upstream collecting benthic macroinvertebrates at the Gila River.

One of the most active groups facilitating outdoor environmental education formed during this period was the Gila Conservation Education Center (GCEC). GCEC was incorporated as a 501(c)(3) non-profit organization in 2004 with the mission to promote conservation in Southwest New Mexico through education, example, and involvement. Some of the recent annual events cosponsored by GCEC include: Gila River Festival, Jose Barrios Elementary Outdoor Classroom Day, San Vicente Outdoor Classroom Day, Gila River Days, Sapillo Campground Outdoor Education Day, and hundreds of "trunk" presentations held throughout the year. Trunks, storage boxes containing educational materials on specific conservation topics, are available for check out for unique place-based presentations to classes and groups.

Also established in the last five years, Aldo Leopold High School is a public charter school in Silver City emphasizing direct experience, inquiry learning, stimulation of the creative process and involvement in the community and natural environment. Included in the curriculum is the goal of creating a continuum of learning that crosses grade levels and allows students to conduct multi-year research and service-learning projects that contribute to their community. Older students are now teaching the younger students, and many schools are routinely pursuing outdoor educational opportunities. With all these efforts, we are closer to the goal of developing a population of people who care about and identify with their local watershed.

Outdoor education labs in the Gila Region:

The Nature Conservancy's Lichty Center, Cliff
San Vicente Creek, Silver City (established with EPA Education Grant)
Bataan Memorial Outdoor Classroom (near Fort Bayard coming soon!)
Mimbres Cultural Heritage Site, San Lorenzo
Silva Creek Botanical Gardens, Silver City
Boston Hill, Silver City
The Big Ditch, Silver City
Dragonfly petroglyph site, Arenas Valley
Gila Cliff Dwellings National Monument
Locations throughout the Gila National Forest



GCEC logo

Weather, Climate, and Streamflow Websites of Interest

With runoff season in full swing after an interesting El Niño winter, we compiled websites used by staff to get the latest New Mexico weather, climate, and streamflow conditions and predictions.

National Weather Service

<http://www.weather.gov/>

USGS Real-Time Data for New Mexico Streamflow

<http://waterdata.usgs.gov/nm/nwis/rt>

The Southwest Climate Outlook

Provides monthly feature articles on drought, floods, tropical storms, monsoon, long-term climate patterns and other topics relevant to the Southwest.

<http://www.climas.arizona.edu/forecasts/swoutlook.html>

Western Regional Climate Center

Good site for historical climate information.

<http://www.wrcc.dri.edu/>

National Weather Service – Satellite Imagery

<http://www.wrh.noaa.gov/satellite/>

Naval Research Laboratory – Satellite Imagery

<http://www.nrlmry.navy.mil/NEXSAT.html>

Natural Resources Conservation Service (NRCS) SNOTEL

Automated snowpack and other meteorological data.

<http://www.wcc.nrcs.usda.gov/snow/>

NRCS Water Supply Forecasting

<http://www.wcc.nrcs.usda.gov/wsf/>

El Niño/La Niña

<http://www.wrh.noaa.gov/wrh/EL-LA/el-la.php>

<http://www.wrcc.dri.edu/enso/enso.html>

New Mexico Climate Center

Climate information including data collected from the NWS cooperative observer program and an automated weather data network.

<http://weather.nmsu.edu/>

Soil Moisture Conditions

<http://www.nws.noaa.gov/oh/hic/current/soils.shtml>

Watershed Protection Section Update

By Abe Franklin, Program Manager

Nonpoint Source Project Information Available on a Public Database

All states, including New Mexico, are required to report to EPA the details of projects funded under Section 319 of the Clean Water Act. One of the main tools for this reporting is EPA's Grants Reporting and Tracking System (GRTS) database. In recent years, GRTS has reached a point where it may be useful and interesting to the public. Anyone can access much of the information in GRTS without a user name or password at the following web address: <http://iaspub.epa.gov/pls/grts/f?p=110:87>

Once you are on this page, select a fiscal year and a state from the drop-down menus and click "Go". New Mexico's current 319 projects are funded under grants awarded in fiscal years 2008 and 2010, and archived information on completed projects dates back to 1990.

Following the above instructions will lead to a list of projects. Click the "view" link on the right of the project title for more information. The available information typically includes the project title, contact information for the state project officer and our cooperator's project manager, schedule and budget information, and the project overview, objectives, and methods. For on-the-ground projects that have implemented best management practices, estimates of pollutant load reductions are also reported.

Watershed Protection Section staff are available to further discuss projects, and GRTS can help the public that we serve get a better idea of what questions to ask and to learn more about projects addressing water quality in their watersheds.

The screenshot displays the EPA Grants Reporting and Tracking System (GRTS) interface. At the top, the U.S. Environmental Protection Agency logo is visible on the left, and the title "Grants Reporting and Tracking System - GRTS" is centered. Below the title, a navigation bar includes links for "EPA Home", "Guest Home", and "Find Projects". The main heading is "Browse Section 319 Nonpoint Source Projects in GRTS". A instruction states: "Use the dropdown menus below to select the parameters of interest and click the 'GO' button. Click the View link to access a summary report of a particular project." The search filters include: Fiscal Year (2008), EPA Region (Any), State (New Mexico), Project Title (empty), TMDL (- All Choices -), Has Pollutant Data (- All Choices -), Project Status (- All Choices -), Type of Project (- All Choices -), and Category of Pollution (- All Choices -). A "Go" button is located below the filters. The results table shows 14 projects for New Mexico in 2008, each with a "View" link.

State	Fiscal Year	Proj#	Title	View
NM	2008	01	Project Mimbres River / Cold Springs Rehabilitation	[View]
NM	2008	02	Project Largo Canyon - Road Maintenance Education	[View]
NM	2008	03	Project Respect the Rio - Education/Empowerment/Restoration	[View]
NM	2008	04	Project NM Watershed Forum (2008)	[View]
NM	2008	05	Project BMP Effectiveness (NPS Effectiveness Assessment 2008-2011)	[View]
NM	2008	06	Project Continued Ecological Restoration of the Rio de Los Pinos	[View]
NM	2008	07	Project Bluewater Creek Temperature Reduction and Riparian Restoration Project	[View]
NM	2008	08	Project Ponil Creek Riparian Restoration Project	[View]
NM	2008	09	Project Upper San Antonio Creek Restoration on the Valles Caldera National Preserve	[View]
NM	2008	10	Project Polvadera Creek Riparian Project	[View]
NM	2008	11	Project Ground Water Quality Bureau Programs	[View]
NM	2008	12	Project Nonpoint Source Management Program core	[View]
NM	2008	13	Project Cimarron Watershed Alliance (Continuation)	[View]
NM	2008	14	Project Comanche Creek Watershed Restoration Project—Restoring Habitat for the Rio Grande Cutthroat Trout, Part 2 (Continuation)	[View]

EPA holds Forum Focusing on Clean Water

In April, a one-day conference “Coming Together for Clean Water” was held by the EPA. The conference focused on better protecting and improving the health of America’s waters. Over 100 policy-makers, non-governmental organizations, government officials, tribal leaders, academics, agricultural stakeholders, and community representatives participated in discussions regarding clean water challenges facing our nation. Leading up to the conference, the EPA sought public input by holding a Web discussion forum on how the nation can better manage and find solutions to these water pollution problems. The feedback received from the online forum helped shape the discussion at the conference. Major discussion themes included watershed approaches to restoring impaired waters, effective nutrient control strategies, sustainable communities, and stormwater pollution challenges.

Even though the online forum comment period has closed, the discussion document and the resulting comments may be of interest.

<http://blog.epa.gov/waterforum/discussion-document/>

[Click here](#) to read EPA Administrator Lisa Jackson’s remarks at the conference.

Help Us Identify Probable Sources of Impairment

“Sources” are defined as activities that may contribute pollutants or stressors to a water body. The list of “Probable Sources of Impairment” in the Integrated 303(d)/305(b) List, Total Maximum Daily Load documents (TMDLs), and Watershed-Based Plans (WBPs) is intended to include any and all activities that could be contributing to the identified cause of impairment. Data on Probable Sources are routinely gathered by Monitoring and Assessment Section and Watershed Protection Section staff during water quality surveys and watershed restoration projects. More specific information on Probable Sources of Impairment is provided in individual watershed planning documents (e.g., TMDLs, WBPs, etc) as they are prepared to address individual impairments by assessment unit.

The list of “Probable Sources” is not intended to single out any particular land owner or single land management activity and has therefore been labeled “Probable” and generally includes several sources for each known impairment. If you have information or concerns regarding particular probable sources of known impairments in watersheds of interest to you, please fill out and submit the interactive form found on the Surface Water Quality Bureau website:

<http://www.nmenv.state.nm.us/SWQB/PS/index.html>.

Information gathered from the Probable Source Sheets will be used to generate a draft Probable Source list in consequent TMDL planning documents. These draft Probable Source lists will be finalized with watershed group/stakeholder input during the pre-survey public meeting, TMDL public meeting, WBP development, and various public comment periods. The final Probable Source list in the approved TMDL will be used to update the subsequent Integrated List.

Help Us Identify Probable Sources of Impairment

Name: _____

Phone Number (optional): _____

Email or Mailing Address (optional): _____

Date: _____

Waterbody Name/ Watershed Name/ Location of concern: _____

From the list below, please check the items you believe are sources of water quality impairment in the watershed or waterbody of concern. In the spaces next to each item you check, please use the following scale to indicate how much of a concern that item is to you by specifying a number between 1 and 3.

(1 - Slight Concern) (2 - Moderate Concern) (3 - High Concern)

✓ ACTIVITY	Scale of Concern	✓ ACTIVITY	Scale of Concern
<input type="checkbox"/> Feedlots	1 2 3	<input type="checkbox"/> Pavement and Other Impervious Surfaces	1 2 3
<input type="checkbox"/> Livestock Grazing	1 2 3	<input type="checkbox"/> Roads/Bridges/Culverts	1 2 3
<input type="checkbox"/> Agriculture	1 2 3	<input type="checkbox"/> Habitat Modification(s)	1 2 3
<input type="checkbox"/> Flow Alterations (water withdrawal)	1 2 3	<input type="checkbox"/> Mining/Resource Extraction	1 2 3
<input type="checkbox"/> Stream/River Modification(s)	1 2 3	<input type="checkbox"/> Logging/Forestry Operations	1 2 3
<input type="checkbox"/> Storm Water Runoff	1 2 3	<input type="checkbox"/> Housing or Land Development	1 2 3
<input type="checkbox"/> Flooding	1 2 3	<input type="checkbox"/> Exotic Species	1 2 3
<input type="checkbox"/> Landfill(s)	1 2 3	<input type="checkbox"/> Waterfowl	1 2 3
<input type="checkbox"/> Industry/Wastewater Treatment Plant	1 2 3	<input type="checkbox"/> Wildlife and domesticated animals other than waterfowl	1 2 3
<input type="checkbox"/> Inappropriate Waste Disposal	1 2 3	<input type="checkbox"/> Recreational Use	1 2 3
<input type="checkbox"/> Improperly maintained Septic Systems	1 2 3	<input type="checkbox"/> Natural Disturbances	1 2 3
<input type="checkbox"/> Other: _____ (Other checked)	1 2 3	<input type="checkbox"/> Other: _____ (Other checked)	1 2 3

Comments: _____

Wetland Program Update

Placer Creek Wetland Restoration Completed

By Kate Coleman, SWQB 401 Officer, and Christine Kelso, NMDOT Environmental Design Division

Placer Creek, located upstream from Hopewell Lake off of US 64, had a problem. Historically, Placer Creek was a lush high-elevation wetland flanked by wet meadows, wallows, and thick stands of herbaceous wetland vegetation. But over time the stream had been subject to degradation that downcut the channel by up to six feet, lowered the water table, dewatered the wetlands and riparian areas, and diminished the wetland habitat. The site, located on the Carson National Forest, became the location of a wetland mitigation and habitat restoration project for the New Mexico Department of Transportation (NMDOT) that was designed by Zeedyk Ecological Consulting, and built by the NMDOT District 5 Tres Piedras Patrol, District 5 Bridge Crew, and others in August 2009. The wetland creation and restoration should enhance the vegetation composition, raise the alluvial water table adjacent to the creek, and reclaim the wildlife habitat that has been lost over time.



Placer Creek with noticeable downcutting occurring.

Restoration Specifications

Baseline monitoring included geomorphologic surveys of the project reach and an adjacent reference reach conducted using standard Rosgen Level II stream survey methodology. This information was used to characterize the reaches and establish restoration treatment objectives. Treatment objectives are based on the principle that degraded channels will tend to evolve toward the long term dynamically stable channel type according to predictable evolutionary scenarios. The long term expectation is that the Placer Creek project reach will eventually evolve to the Rosgen E Type (moderate sinuosity with stable banks and bed) with short intermingled subreaches of the Rosgen C Type (meandering with lateral adjustment common and a well developed floodplain). In addition, biological surveys were conducted by Marron and Associates, which were used to develop habitat restoration objectives.



Planning of restoration design with Bill Zeedyk, Scott Draney, NM Game and Fish Department, and Lori Walton, NMDOT Environmental Design Division.

The restoration treatments involved installing rock and sod structures within the creek to arrest downcutting and raise the bed level, reconnecting the creek and its floodplain, increasing the active floodplain area, encouraging natural meander bends, stabilizing stream banks, and enhancing the stream's natural riffle-run-pool-glide sequence. The crews installed around sixty in-stream structures along a one-mile stretch of stream. The majority of the in-stream structures required hand placement of rock with the same patience and care as needed by masons to build a stone wall. The equipment operators handled the large equipment to precisely place two-foot boulders and sod for the larger structures used to stop headcuts and induce stream meanders. To protect and improve the area habitat, the crews built a 10-acre exclosure fence around the project at the end of September 2009.

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Effects of Habitat Restoration

The Placer Creek project area provides suitable potential habitat for rare plants and animals including the Arizona willow (*Salix arizonica*), northern goshawk (*Accipiter gentilis*), northern leopard frog (*Lithobates pipiens*), water shrew (*Sorex palustris navigator*), masked shrew (*Sorex cinereus cinereus*), and New Mexico meadow jumping mouse (*Zapus hudsonius luteus*). Several of these species (the Arizona willow, water shrew, and probably the northern leopard frog) have already been observed in the project area. The degraded conditions along Placer Creek have limited the extent of habitat for all of these species. The wetland restoration will greatly expand and improve the quality of habitat for these species. For example, the Arizona willow found within the project area was restricted to a small patch near a spring. The plants at this location were cropped very close to the ground, rarely exceeding 2-3 inches in height. It is anticipated that with the removal of grazing pressure and the stream improvements the extent of Arizona willow will expand along the entire length of the creek within the project area.



A sod baffle used to extend the point bar and increase floodplain area. The dense sod is composed of wetland species transplanted into moist, strategic locations.



Construction of a cross vane with NMDOT District 5 equipment including an excavator equipped with a thumb for exact boulder placement.

Both the water shrew and masked shrew live adjacent to high altitude streams in the dense vegetation. Water shrews were noted in the southern portion of the project area, but were not observed in the northern project area where bank erosion is more severe. The restoration of these banks and the adjacent riparian vegetation should expand the potential habitat for both the shrews and the New Mexico meadow jumping mouse. Although the boreal toad (*Bufo boreas boreas*) was not found at the mitigation site, the restoration along the creek would also provide suitable habitat. Upon completion of the habitat restoration, Placer Creek could be a potential reintroduction site for the boreal toad.

Conclusion

The restoration treatments will improve the vegetation composition, raise the groundwater elevation adjacent to the creek and reclaim the wildlife habitat that has been lost over time. Before the restoration project, 1.3 acres of wetlands existed at Placer Creek based on a wetland delineation performed by Marron & Associates in 2008. The project is expected to create 4 acres of new wetland and riparian area. The project will be monitored for the next five years so stay tuned for updates!



Completed one rock dam to stop downcutting and start raising the bed level. Some structures used a "fish scaling" construction method (see inset photo) to help maintain structural integrity.

GET INVOLVED!

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

May 10-11th - Carlsbad Children's Water Festival.

May 13th - Artesia Children's Water Festival.

May 14-16th - Albuquerque Wildlife Federation, Limestone Canyon (San Mateo Mountains) volunteer restoration weekend. For more information, see <http://abq.nmwildlife.org/>.

May 15th - Earth Works Institute, work day at the Arroyo Hondo Open Space to do clean up, invasive species removal and possibly some monitoring. Contact kina@earthworksinstitute.org for more information.

May 17-18th - San Juan Basin Water Fair at McGee Park in Farmington.

May 19th - Upper Pecos Watershed Association, Cow Creek Road Clean Up at 9:30am. For more information, contact Lanier Watson at 505-757-2107.

May 21-23rd - Tres Alianzas Restoration Weekend - San Francisco River, NM. Contact Sarah at sarah@skyislandalliance.org or 520-624-7080 x23 to sign up.

May 22-23rd - Quivira Coalition, Mora River Restoration Workshop (Free). More information and registration online at www.quiviracoalition.org.

May 22nd - Earth Works Institute, Community Day at the Cerrillos Hills Open Space Park at 1pm. Contact kina@earthworksinstitute.org for more information.

June 6th - Santa Fe River Day on De Vargas St. between Guadalupe and Sandoval, Santa Fe.

June 14th-18th - Wetland Training Institute (WTI) training "Planning Hydrology, Vegetation, and Soils for Constructed Wetlands" in Santa Fe. If interested, contact WTI to assure there are enough attendees to hold the training. Email: getinfo@wetlandtraining.com Phone: 877-792-6482 www.wetlandtraining.com

June 18-20th - Albuquerque Wildlife Federation, Rio de las Vacas volunteer restoration weekend. For more information, see <http://abq.nmwildlife.org/>.

June 19th - Earth Works Institute, water harvesting and erosion control workshop at El Dorado Open Space. Begins at 10am. There is also a workshop slide show at the Eldorado community center at 7pm on June 17th. Contact kina@earthworksinstitute.org for more information.

June 23rd - Annual Upper Pecos Watershed Association Stakeholder Meeting, Time and location TBD. Check <http://www.pecoswatershed.org/> for updates.

June 26th - Upper Pecos Watershed Association River Clean Up. Meet at 9am at UPWA offices 78 S. Main St. Pecos, NM. Check <http://www.pecoswatershed.org/> for more details.

July 16-18th - Albuquerque Wildlife Federation, Valle Vidal volunteer restoration weekend. For more information, see <http://abq.nmwildlife.org/>.

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