Clearing the Waters Newsletter

Volume 16, No.2 Summer 2011

Inside this Issue: pg.

Editor:
Matt Schultz
matthew.schultz@state.nm.us

If you would like to receive this newsletter by email, or to be removed from the mailing list, please contact Bessie Muzumdar bessie.muzumdar@state.nm.us

CTW is also available on our website at:

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

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.

Streambank Stabilization Workshop Held

A streambank stabilization workshop attended by over 30 participants was held May 24-26th in Silver City, and featured many national Natural Resource Conservation Service presenters from the West National Technology Support Center. The goals of workshop were to review geomorphological concepts, present a diverse array of streambank stabilization techniques, and increase success rate of streambank stabilization projects. The workshop agenda consisted of both classroom and field components including fluvial geomorphology, hydraulics, geology, soil mechanics, geotechnical bank stability, sediment transport and scour, vegetative treatment techniques, and structural stabilization techniques. The workshop also provided technical training in streambank stabilization planning, methodology, and implementation for Southwestern ecosystems. The knowledge shared will have conservation benefits for years to come.

Bank Erosion Hazard Index field exercise with Dr. Barry Southerland on the Gila River

NMED Surface Water Quality Bureau's Watershed Protection Section

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

EQIP and Section 319 Funds Partnership

By David Tomko, San Juan Watershed Group Coordinator

The San Juan Watershed Group (SJWG) is using Section 319 grant funds from the New Mexico Environment Department in combination with the Natural Resource Conservation Service's Environmental Quality Incentives Program (EQIP) funds to improve water quality in the Animas, La Plata, and San Juan Rivers. One of EQIP's national priorities is the "reduction of non-point source pollution, such as nutrients, sediment, pesticides, or excess salinity in impaired watersheds, consistent with Total Maximum Daily Loads (TMDLs) where available, as well as reduction of groundwater contamination and conservation of ground and surface water resources." With the combined funding, SJWG seeks to implement agricultural best management practices on irrigated bottomland adjacent to perennial rivers.

San Juan River

EQIP provides cost-share funds to working ranchers and farmers to reduce the financial burden of installing voluntary conservation improvements. The current cost-share rate is 75%. However, not all expenses associated with the projects are eligible for EQIP reimbursement. For example, EQIP will provide reimbursement for the piping, sprinklers, and pumps for irrigation systems, but not for the cost of extending electricity to the pump. SJWG will partner with select farmers and ranchers to provide additional assistance using its 319 funds. The funding rate from the 319 program will be 60% of the owner's match after the EQIP reimbursement, or other appropriate expenses. The remaining 40% is considered the in-kind non-federal match. Both EQIP and 319 programs have as a general principle that an applicant should contribute something to funded projects, in either cash or volunteer labor.

A study conducted by the SJWG documented high levels of *E. coli* bacteria in irrigation return flows from agricultural fields using flood irrigation. This is especially true of fields that are used as year-round or winter pasture for livestock. Flood irrigation is very inefficient (35%) and often results in return flows that discharge to the rivers. Converting to sprinkler irrigation increases water usage efficiency to 80% and essentially eliminates excess runoff. The EQIP/Section 319 partnership will result in reduced bacterial and nutrient loading to the rivers, and increased irrigation efficiency and economic benefits to the local farmers and ranchers. A win-win situation for everyone.

Side-roll irrigation sprinkler: One conservation practice being funded and installed

For more information on combining EQIP and 319 funds, contact David Tomko at jtomko73@msn.com.

EGIS Mapper Online and Ready to Use

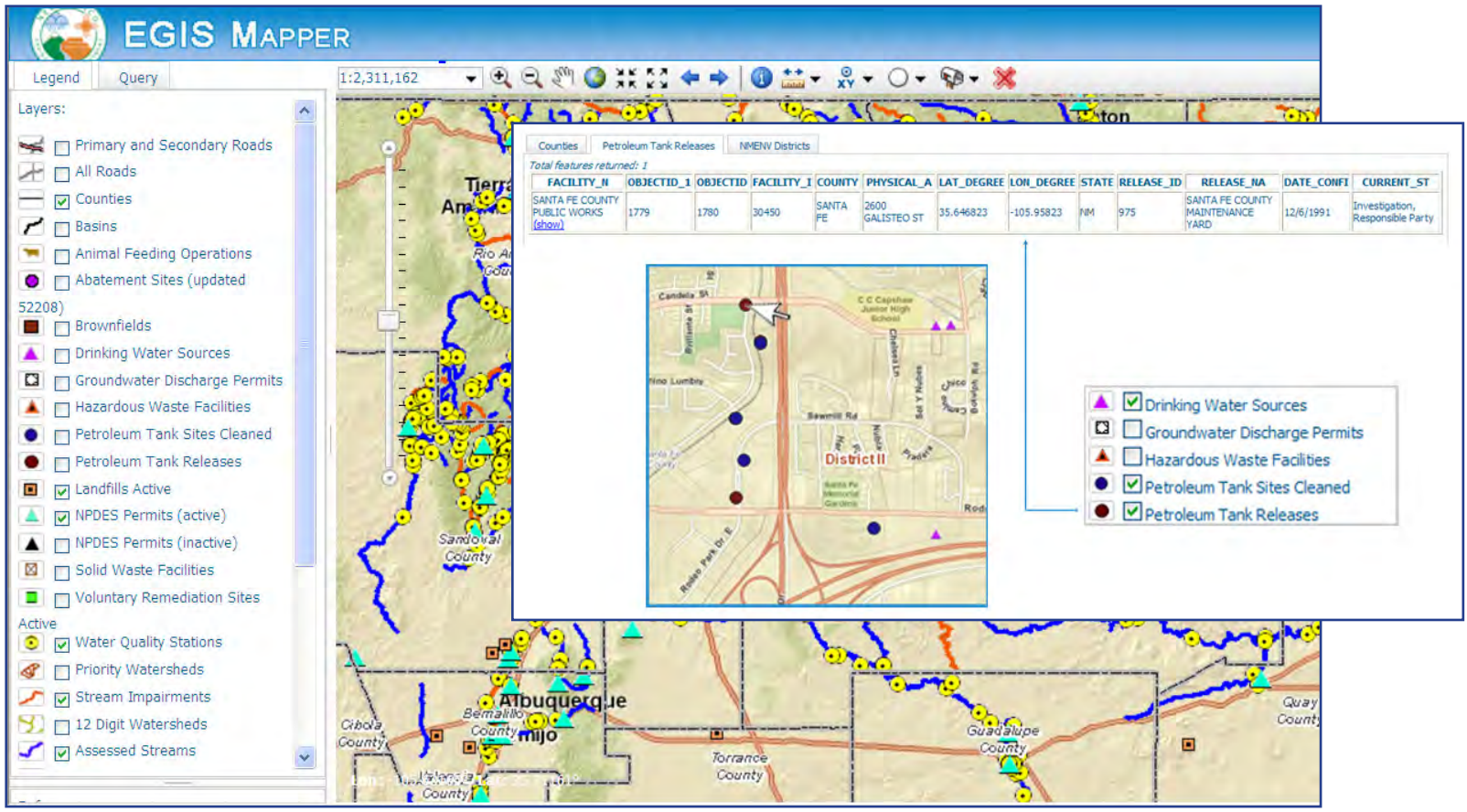
The EGIS Mapper is an interactive online map developed by NMED displaying key environmental features and geographic relationships in New Mexico. The maps capture and depict the patterns, conditions, and trends of New Mexico environmental management created from data gathered by governmental agencies, university scientists, and concerned citizens.

Opening the EGIS Mapper (http://gis.nmenv.state.nm.us/EGIS/) will display a street map of the state of New Mexico navigated much like Google's street map. Data layers can be turned on and off, and include assessed streams, water quality stations, stream impairments, NPDES permits, watershed boundaries (12 digit HUC), priority watersheds, among others. The EGIS Mapper is meant to be interactive: you can easily go from one area to another to find the information of interest. NMED is continually updating the content so that the information, data, and maps are current and accurate.

We welcome your interest and feedback about any aspect of the information, data, or maps. This EGIS Mapper is made for you, so if there is anything that you would like to see included, or you discover an error, or just want to tell us how we're doing meeting your needs, please let us know.

For more information, contact Zachary Stauber NMED GIS Coordinator at: zachary.stauber@state.nm.us.

Spatial data on New Mexico watersheds and waters can also be found at:
New Mexico Resource Geographic Information System (RGIS) http://rgis.unm.edu/
Enviromapper (EPA) www.epa.gov/emefdata/em4ef.home
Watershed Assessment, Tracking & Environmental ResultS (WATERS) www.epa.gov/waters/



The New Mexico EGIS Mapper is not like any atlas you have ever used. It's electronic, and filled with up-to-date maps and information about the state, its environment, and its people.

New OSM/VISTA Volunteers join New Mexico Watershed Groups

By Adrian Uzunian, Western Hardrock Watershed Team

In September, three motivated, enthusiastic OSM/VISTA volunteers will be joining New Mexico watershed groups based out of Bloomfield (San Juan Watershed Group), Albuquerque (Rio Puerco Alliance), and Santa Fe (Santa Fe Watershed Association/Railyard Stewards). But just what is an OSM/VISTA? OSM/VISTAs are the result of an innovative partnership between the Office of Surface Mining and AmeriCorps VISTA (Volunteers in Service to America) which pairs college-educated volunteers with community groups for a year of service in areas impacted by economic decline and environmental degradation. These volunteers, called OSM/VISTAs, center their work around five core goals: building community capacity; supporting watershed research including water quality monitoring and clean water initiatives; encouraging environmental education and awareness; developing economic sustainability, and professional development for the OSM/VISTA. By partnering with watershed groups, government agencies, and concerned citizens in New Mexico, OSM/VISTAs help to create a greater network of communities able to work together and accomplish goals.

Western Hardrock Watershed Team Spring 2011

These OSM/VISTAs are part of the Western Hardrock Watershed Team (WHWT), based in Durango, CO, and serving in both Colorado and New Mexico. Since the Team started in 2007, 46 OSM/VISTAs with the WHWT have generated over 9,500 hours of community service, over $300,000 in-kind donations, and over $300,000 in grants and other cash donations in Colorado and New Mexico. The key to the WHWT's success is our ability to place skilled, determined volunteers with community/watershed groups. The result is a sustainable model that reaches rural and urban areas where the lack of jobs, training, and funding results in fewer resources available to watershed groups and their communities.

The Gila Resources Information Project (GRIP) in Silver City, NM has had an OSM/VISTA since February 2010. Throughout her year of service, OSM/VISTA Regina Willis focused her efforts on building the capacity of GRIP. Regina had many successes, including helping start the Silver City Watershed Keepers, a volunteer monitoring group that works to provide water quality data and encourage stewardship of the Silver City watershed. She compiled water resource and historical mining data for the Silver City watershed using GIS. Regina also focused her time on outreach to the community, often appearing on television and at various community events. Building on her success, Dan Hintz started as an OSM/VISTA with GRIP this February. Based on the earlier data collected, he prepared a series of potential groundwater quality restoration projects for consideration by the Office of the Natural Resource Trustee. Dan now plays a lead role in the Silver City Watershed Keepers.

Regina Willis mapping along San Vicente Creek

Continued on page 5

VISTAS continued from page 4

Rachel Folk, OSM/VISTA volunteer with the Upper Pecos Watershed Association during 2010, was similiarly engaged in a number of watershed initiatives in the Pecos community. Rachel worked on the Pecos Canyon Collaboration bringing the various stakeholder groups and agencies together to improve the Pecos Canyon environment. Organizing volunteers and planning events including Dia del Rio, the spring river clean-up, improved the capacity of the watershed group. Other collaborations occurred with Truchas Chapter of Trout Unlimited in conjunction with their "Trout in the Classroom" project teaching about water quality and how it relates to fish habitat and humans. Rachel also participated in the Pecos Valley Community Foundation's rural revitalization initiative. OSM/VISTAs have clearly been an asset to the Silver City and Pecos communities, and the WHWT is pleased to expand its ability to provide similar assistance to other watershed groups throughout New Mexico.

VISTA volunteer Rachel Folk (middle) and WHWT VISTA summer intern, Reina Fernandez (left).

OSM/VISTA Dan Hintz monitoring with the Silver City Watershed Keepers

For OSM/VISTAs starting in September, their duties will be broad, but still center around our five core goals. After living for several years in Colorado, Nik Gualco will be moving to Albuquerque to serve with the Rio Puerco Alliance. He will focus on building organizational and community capacity within the Rio Puerco Watershed, increasing community awareness through education and outreach, developing relationships with community leaders and government agencies, and assisting in the procurement of future funding. After serving a year in Colorado, Rachel Boothby will be lending her services to a partnership between the Santa Fe Watershed Association and the Railyard Stewards. She will be using her experience from last year to help these two Santa Fe-based organizations increase their volunteer youth base, coordinate watershed awareness efforts, develop outreach campaigns, and assist in obtaining funding for new programs. Finally, Melissa May will be serving with the San Juan Watershed Group. Melissa will assist in developing a comprehensive watershed based plan, meet with local government and business officials to explain the need for improved water quality, coordinate stream restoration projects, and provide educational and outreach opportunities for the local community.

As the Team expands in New Mexico, more community/watershed organizations are needed to host year-long volunteers. WHWT is looking for watershed groups working in historic mining communities and interested in pursuing the 5 core goals of the WHWT: Capacity building, water monitoring, environmental education and awareness building, economic development, and professional development. If you know of a group that could support a year-long, full-time volunteer, please contact Adrian Uzunian at support@hardrockteam.org or call 970-403-0136. You can also find the Team online at www.hardrockteam.org.

Black Canyon Creek

By Matt Schultz, SWQB-WPS

Black Canyon Creek is a major tributary of the Gila River and a reintroduction site for native Gila trout. The creek drains a total watershed area of 113 square miles, nearly all within either the Aldo Leopold Wilderness or Gila Wilderness Areas. The watershed is mostly steep and forested at elevations ranging from about 5,700 to 10,000 feet. The State of New Mexico 303(d)/305(b) Integrated List for Assessed Surface Waters listed Black Canyon Creek as nonsupporting for its designated use as a high-quality coldwater fishery. At the SWQB sampling station in 1999, 37% of temperature readings exceeded the 20° C standard for high-quality coldwater aquatic life. The most likely cause of these temperature exceedances was high-intensity wildland fire and subsequent flooding in 1995–1996 that resulted in loss of riparian shade cover, inhibited vegetation regeneration, increased sediment runoff, increased channel width, and filled in pools.

Black Canyon in the Gila National Forest

The project goal was to reduce temperature exceedances on Black Canyon Creek by reestablishing riparian shade cover, decreasing the channel width-depth ratio using a bioengineering approach, increasing bank vegetation, and reducing erosion. Low-cost in-stream structures using locally available materials were placed to reduce the channel width-depth ratio and create pools. Rock stream barbs were manually constructed to redirect streamflow away from eroding banks, while encouraging sediment deposition to reduce channel width and promoting vegetation establishment. Low rock weirs were manually constructed to maintain existing pools or enhance pool development in the stream. Cuttings of woody riparian species (e.g. narrowleaf cottonwood and willow species) from nearby the project site were transplanted to appropriate streambank and bar locations to increase shade cover, decrease bank erosion and creek sedimentation, and enhance pool features. Local wetland species (e.g. sedge, rush) were also transplanted to slower backwater areas to capture sediment that may otherwise be deposited in pool features. Large woody debris was added to part of the channel at select locations to encourage further pool formation.

Gila Trout
Image from Western Native Trout Intiative website

Cooperator Logos
Collaboration is key.
Thanks also to the Diamond Bar Ranch, Tom Cooper, Joseph Franklin-Owens, Brent Sytch, and Ellen Soles.

Continued on page 7

BLACK CANYON continued from page 6

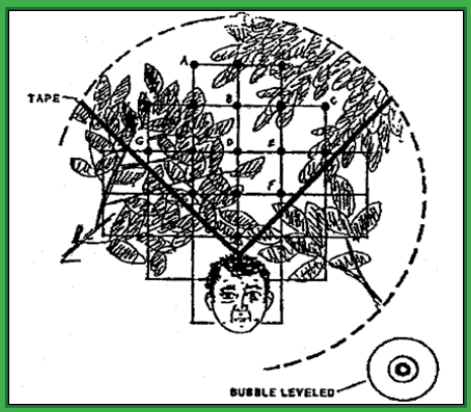
Quality pool habitat not only reduces water temperatures, but also increases Gila trout biomass and serves as a refuge during low flow periods to support a sustainable high-quality coldwater fishery. Volunteers from the Mesilla Valley Flyfishers Association, Gila-Rio Grande Chapter of Trout Unlimited, and New Mexico State University fisheries students made two trips to the site to assist in monitoring and revegetation efforts. These efforts were highlighted in a New Mexico Game and Fish video production called "Gila Trout Cover" and broadcast on the New Mexico Wild TV show. The video clip can be viewed online at: www.youtube.com/user/NMGameandFish#p/c/0391D5CAF9A971D4/11/z1HqqLrNQ9k.

Volunteer planting willows along eroding cutbank on Black Canyon Creek

"...Black Canyon is potentially one of the best trout streams in southern New Mexico."
-Rex Johnson Jr. Flyfishing in Southern New Mexico

Load Reduction Calculation

Load reductions for the completed project were calculated using the Stream Segment Temperature Model (SSTEMP) www.fort.usgs.gov/Products/Software/SNTEMP/ using TMDL parameters (www.nmenv.state.nm.us/SWQB/TMDL/list/) and project specific results including an increase in vegetation canopy cover from 57 to 74%. Loading was reduced by approximately 60.45 joules/meter^2/second within a 2.5 mile reach (14% of the TMDL segment length), equivalent to an average load reduction of 8.5 joules/meter^2/second for the TMDL segment. The 74% canopy cover represents the current measurement and as the riparian vegetation plantings mature, further increases in shade cover and decreases in modeled water temperature can be expected to reach the TMDL goal of 84% to meet the water temperature standard (20°C). In addition, direct measurements of water temperature showed a decrease in exceedances of the water temperature standard from 37% (NMED, 2000) to 11–14% exceedance during the project period using thermographs recording on an hourly basis.



Densiometers (middle photo) were used to measure canopy cover (i.e. shade) at Black Canyon Creek.

GET INVOLVED!

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

August 12-14th - Comanche Creek Workshop--Rio Grande Cutthroat Trout Habitat Restoration. Quivira Coalition. Valle Vidal Unit, Carson National Forest. For more details, see http://quiviracoalition.org.

August 19-21st - Valles Caldera Volunteer Restoration Weekend. Albuquerque Wildlife Federation and Los Amigos del Valle Caldera. For more details, see http://abq.nmwildlife.org/

August 20th - Mesteño Draw Restoration Workshop. Mountainair, NM. For more details, see http://quiviracoalition.org.

August 24-26th - Introduction to Stream Morphology and Monitoring Workshop. Ponil Creek (Cimarron). Cimarron Watershed Alliance & the Quivira Coalition. For more details, see http://quiviracoalition.org.

August 26-27th - Carbon Economy, Carbon Farming and Regenerative Agriculture Workshop Series. Friday Public Talk 7-9pm "Building Local Food Systems" Joel Salatin from Polyface Farms. Saturday All Day Workshop 9:30-4:30 pm. Santa Fe, NM. www.carboneconomyseries.com/calendar

September 1-2nd - Geomorphology Surveying Monitoring Clinic. Quivira Coalition. Valle Vidal Unit, Carson National Forest. For more details, see http://quiviracoalition.org.

September 3-4th - Photo Monitoring Clinic. Quivira Coalition. Valle Vidal Unit, Carson National Forest. For more details, see http://quiviracoalition.org.

September 15-18th - 7th Annual Gila River Festival. For more details, see http://www.gilaconservation.org/7thannualgrf.shtml

September 16-18th - Carbon Economy, Carbon Farming and Regenerative Agriculture Workshop Series. Friday Public Talk 7-9pm "Holistic Land Management" Kirk Gadzia . Saturday and Sunday All Day Workshops 9:30-4:30 pm. Santa Fe, NM. www.carboneconomyseries.com/calendar

September 16-18th - Cebolla Canyon Volunteer Restoration Weekend. Albuquerque Wildlife Federation. http://abq.nmwildlife.org/

September 17th - Rio San Antonio Restoration. NM Ttrout. For more details, see http://newmexicotrout.org/conservation/2011-projects.

October 1st - Mesteño Draw Restoration Workshop. Mountainair, NM. For more details, see http://quiviracoalition.org.

October 8-10th - Riparian & Wildlife Habitat Restoration. Quivira Coalition. Red Canyon Reserve, Socorro County, NM. For more details, see http://quiviracoalition.org.

October 14-16th - Erosion Control Workshop. Double Circle Ranch. Eagle Creek Watershed, AZ. For more details, contact Wilma at info@doublecircleranch.com.

October 15th - Cedro Creek Volunteer Restoration plus end-of-season celebration. Albuquerque Wildlife Federation. http://abq.nmwildlife.org/

October 19-22nd - Applied Watershed Restoration Course. Near Las Vegas, New Mexico. For more details, see www.drylandsolutions.com.

November 7-10th - American Water Resources Association's 47th Annual Water Resources Conference. Albuquerque Hyatt Regency www.awra.org/meetings/ABQ2011/.

November 8-10th - Quivira Coalition's 10th Anniversary Conference: "New Agrarians: How the Next Generation of Leaders Tackle 21st Century Challenges." The Embassy Suites Hotel in Albuquerque, NM. For more details, see http://quiviracoalition.org.

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