CLEARING THE WATERS

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Gallinas Watershed Stewardship Enhancement Project

By Nina Wells

The Gallinas River is an important tributary to the Pecos River. The State of New Mexico Standards for Interstate and Intrastate Surface Water includes as part of the designated uses for the headwaters of Gallinas River a high quality coldwater fishery listing, which is a perennial surface water in a minimally disturbed condition. Located on the east side of the Sangre de Cristo Mountains, it is the primary source of water supply for the City of Las Vegas, New Mexico and contributes 90% of the water to Storrie Lake State Park. The diversity of the watershed supports multiple uses including recreation, agriculture, timber, livestock and farming, and urban growth.

Tierra Y Montes Soil and Water Conservation District (District) has a long history of providing technical and economic assistance to support healthy environmental conditions and conservation of resources especially water. Through various funding mechanisms including Clean Water Act §319 (h) resources, staff at the District has worked with private landowners and federal and municipal agencies to promote "on-the-ground" practices that result in improved watershed health.

The District recently completed the Gallinas Watershed Stewardship Project. This was a four year project, with the goal to improve water quality by reducing erosion and siltation through the use of best management practices (BMPs) in the Gallinas River watershed. The project included an educational outreach component to the local schools, adult outreach forums and one-on-one discussion of watershed problems. This served to provide a sense of ownership and stewardship

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of the watershed and was intended to create a greater sense of awareness of existing conditions with potential economic benefits. For example, a degraded riparian system will likely have erosion issues, which results in a loss of fertile topsoil. Opportunities toimprove river health and water quality through watershed management include simple measures such as deferred grazing, to more complex methods such as installation of structures in the river or timber management. The assistance provided to city and county government helps to protect the watershed for future use and, through the regulatory roles oflocal governments, will strengthen the outlook for future generations.

Site specific land management / treatment practices were chosen to reduce erosion and siltation with a desired end result of at least 10% reduction in turbidity.

1. Skate Pond Park before treatment

In 2003, the District teamed up with the City of Las Vegas to improve the City Skating Pond Park at Montezuma. Vehicles crossing the Gallinas River to get to the park / picnic area had caused extensive damage in the riparian area. The stream was channeled above the crossing, with 4 feet of dirt artificially placed on the left bank and a bedrock wall on the right bank. This configuration resulted in minimal access to the river's floodplain increasing erosion on 175 feet downstream. The erosion contributed to sedimentation and in the skate pond. Three wicker weirs and a baffle were constructed to slow down the water and to create a meander on this channelized section. The baffle, a structure made from wood and rocks and used to change flow direction, is filling with sediment and vegetation is becoming established. The weirs (structures across the river width used to stabilize and lift the stream bed), constructed below the baffle will slow the velocity, minimizing erosion and encouraging vegetative growth to stabilize the banks.

A chain link fence was installed in the upper portion adjacent to the road to keep the public from dumping trash and to limit vehicular access in to the area. Guardrails were also installed with the assistance of New Mexico Department of Transportation. Park users can access the other side of the river through strategically placed rocks and the City is planning a walking bridge.

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Flowing together in San Juan County

By Abe Franklin

The San Juan and Animas Rivers converge in Farmington, New Mexico where approximately half of New Mexico's surface water flows. The Animas River is one of the West's largest rivers still unfettered by a major dam. On the San Juan River, a world-renowned coldwater fishery was made possible by Navajo Dam. With a population already over 120,000 and growing more than twice as fast as New Mexico's overall population, the residents of San Juan County enjoy an uncommon prosperity but also find themselves in a rapidly changing environment. San Juan County has a tradition of respect for individual responsibility, fiscally conservative government, and low taxes, but many people are aware of a variety of threats to their quality of life posed by rapid development and increasing industrial activity. Likewise, representatives of industry and the government agencies that manage growth and natural resources are aware that they are likely to face more demand for environmental protection in the future. All parties wish for cost-effective solutions to their common problems.

2. Structures at Skate Pond Park

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Chinese elms and box elders were thinned, shredded and mulched. Cottonwood and willow whips were planted on the banks, and the slopes along the river were seeded with native plants and grasses.

In December of 2003, local landowners and District staff, built a 22-foot vane on a highly river-eroding section. A vane is a structure used to "nudge" the river thalweg away from an eroding bank. This type of structure is made from poles decreasing in height from the bank into the river and is designed to move the thalweg or deepest part of the river. It can be used to encourage a meander, and to deposit silt and sediment. This vane will minimize streambank erosion and provide stability for riparian vegetation to grow (photos 3 & 4). The District has worked with numerous landowners and as the successes become visible, neighbors request information and have participated in restoration activities of their own.

3. Installation of vane structure

4. Vane structure in action

One of the highlights of this project was to return the Gallinas River to the valley floor on a section of private property. The landowner had contacted the District because of downcutting occurring in the river. After site visit and downstream observation, the District concluded that an irrigation ditch had captured the river. Initial work included survey and stream measurements and Bill Zeedyk, watershed specialist, was consulted to design this demonstration project.

Returning the river to the valley bottom meant cutting through the bank at an angle that would support the slope and curvature as dictated by areas of the river used as a reference. The preparation included acquiring materials to retain or slow down the sediment and getting the equipment on-site. The timing of the project was very critical and construction activities were scheduled for low flow season. A track hoe proved to be the ideal piece of equipment for this project, as it would provide the least damage and could triple the amount of work in the least amount of time. Based on the survey data approximately 100 feet were sculpted for the new riverbed, connecting the stream to the original riverbed on the valley floor. The remnant river still had shallow underground flow and riparian/wetland vegetation, however, it needed to be widened to accommodate the new flow. Vegetation removed during construction activities was replanted on the banks. Structures were incorporated into the new river bed to "nudge" the river into a meandering pattern. After re-alignment of the river and with the natural meandering, an additional 275 feet were added to the river length. With stream slope decreased, the flow will decrease, reducing erosion and encouraging riparian habitat.

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5. Sediment traps used during realignment

6. Preparing river bed

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The results of this project include increased groundwater recharge, healthier riparian, stable banks, and enhanced wet meadow habitat.

The District and SWQB staff were extremely fortunate that after construction of this project was completed, the summer rains came. As part of the planning process, we had seeded and mulched all disturbed surfaces, but cool temperatures and higher humidity associated with the "monsoon" season made the project much more successful than was envisioned. There was no loss of transplanted vegetation. The cottonwood and willow whips that were planted have survived and wetland species were transplanted successfully. This project involved match assistance from the landowner, neighbors, graduate students, youth groups, and had high visibility in the community. ~

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The Animas, a treasured river flowing through a rapidly changing world.

How can citizens, industry, and government work together to find these solutions? Certainly, a good way to start is by talking to each other. The San Juan Watershed Group was formed to encourage collaboration and has successfully been meeting for more than three years. The Group is one of several in New Mexico funded by Clean Water Act Section 319 funds granted by the Environmental Protection Agency (EPA). The group's coordinator is a civil engineer with decades of experience in water resources management and collaborative planning processes.

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Early on, the Group developed a mission and several goals with a focus on water quality, and consistent with the Meridian Institute's contract. Beyond this initial framework, however, the Group has largely determined its own priorities and chosen its own path.

Most of the Group's participants had experience with other planning processes related to water, such as the Regional Water Planning Process, the San Juan Basin Recovery Implementation Program for two endangered fish species, and planning for the Animas-La Plata Project. Few were familiar with the laws and regulations pertaining to water quality in New Mexico. Now, many members of the Group are more familiar with New Mexico's water quality program, and have been interacting regularly and constructively with SWQB staff and the Water Quality Control Commission regarding water quality monitoring, stream listing decisions, and Total Maximum Daily Loads.

Recently, the San Juan Watershed Group has begun moving towards addressing the water quality problem that seems most pressing to them. They developed the San Juan Basin Watershed Management Plan, which acknowledged high levels of fecal coliform bacteria in the San Juan and Animas Rivers as the highest priority for the Group. The Group submitted a proposal to the New Mexico Environment Department requesting Clean Water Act Section 319 funds to help determine the sources of the bacteria through more detailed monitoring than has been conducted to date, and to implement on-the-ground projects as indicated by the results of this monitoring. Their project would also characterize the functioning of septic tanks in areas near the rivers, and would make their work known to the general public through workshops and public meetings. The project will be funded, pending development of a project workplan that can be approved by EPA. ~

The San Juan Basin Watershed Management Plan can be found on the Internet at:
www.nmenv.state.nm.us/swqb/projects/SanJuan/BasinPlan/SanJaunBasinPlan.pdf

A Good Start on a 4.7 Million Acre Problem – the Upper Santa Fe Watershed Restoration Project

By Abe Franklin

The upper Santa Fe River, contributing about forty percent of the water supply for Santa Fe, is nearly pristine - but its watershed is not. Conditions there posed a serious threat to water quality before the Upper Santa Fe Watershed Restoration Project was implemented. The majority of the upper Santa Fe River watershed is made up of ponderosa pine forest, and like most of these forests in the southwest, decades of fire suppression had led to an unnaturally dense forest susceptible to intense forest fires. Similar issues are facing the approximately 4.7 million acres of ponderosa pine forest in New Mexico.

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Thinning in the Santa Fe Watershed

Santa Fe Watershed *continued from page 5*

Of the 17,000 acres in the upper Santa Fe River watershed, 10,000 are not in designated Wilderness. Thinning was thought to be feasible on just over 7000 of these acres, which are considered the project area. Over 3000 acres (of 4000-6000 acres planned) have been thinned, and over 2000 acres of piles have been burned. Approximately 2000 additional acres are yet to be thinned, and additional extensive prescribed fire is planned to reduce fuel loading and bring the watershed to a more natural condition. This project, now primarily funded through Congressional earmarks, gathered momentum with support of the Section 319 program (which funded thinning, prescribed burning, and some coordination and outreach), and is probably the largest and best-monitored forest restoration project in New Mexico.

Public involvement during the planning phase of the project was much greater than that mandated by the National Environmental Policy Act, and has continued with semi-annual meetings of a Technical Advisory Group (TAG) and other participants coordinated by the Santa Fe Watershed Association. The purpose of the TAG is to guide monitoring activities, interpret monitoring results, and advise the Santa Fe National Forest accordingly. The result has been a successful application of adaptive management throughout the project.

Also through this project, the Santa Fe Watershed Association developed a Watershed Restoration Action Strategy for the greater Santa Fe River Watershed (from Lake Peak to the Rio Grande) with input from a Watershed Advisory Group representing many organizations and interests. That document is available on the Internet at:
www.nmenv.state.nm.us/swqb/Santa_Fe_WRAS-2002.pdf.

While the project is making significant headway at restoring the watershed's ponderosa pine forest, it does not address the threat to water quality posed by potential wildfire in the upper elevation forest within designated Wilderness. This area, though only comprising about 7000 acres, is the source of most of the Santa Fe River's flow, and is covered by forest types that naturally burn as infrequently as once in two or three hundred years at the highest elevations. While this project has worked towards restoring natural fire ecology (and thereby protecting water quality) at middle elevations, natural processes can still be expected to impact the Santa Fe River and drinking water infrastructure within a longer-term planning horizon.

Another key aspect that will determine the project's ultimate success is the degree to which the Santa Fe National Forest is able to utilize prescribed fire (or prescribed natural fire) to maintain the project's benefits into the future. Without this management commitment, and cooperation with other agencies and the community, this approach to restoring ponderosa pine forest (over $900 per acre for the thinning conducted in this project) is probably not cost-effective. ~

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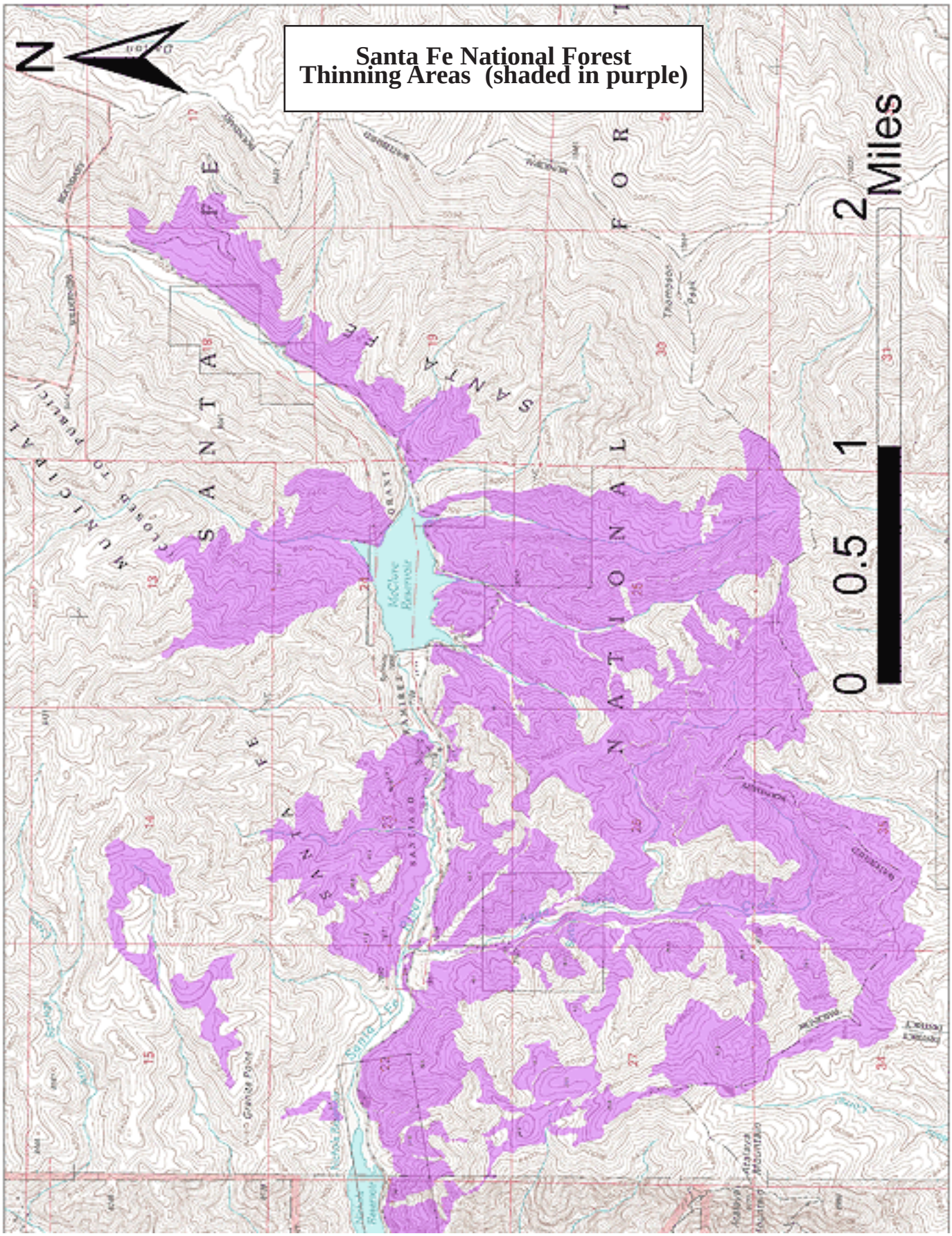
Santa Fe National Forest
Thinning Areas (shaded in purple)
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SANTA FE NATIONAL FOR
SANTA FE
McClure Reservoir
Santa Fe
Closed to Public

FUTURE EVENTS

APRIL 29 Riparian Baseline Monitoring Techniques

(Cedro Creek, Tijeras, NM) Presented by the Quivira Coalition. Instructor, Maryann McGraw - NMED Surface Water Quality Bureau. For more information visit: www.quiviracoalition.org

MAY 6-7 Erosion Control and Riparian Restoration on the Dry Cimarron

(Rainbow Ranch, Folsom, NM) Presented by Quivira Coalition; Instructor: Bill Zeedyk - watershed consultant. For more information visit: www.quiviracoalition.org

MAY 20-21 "My Creek's in the Wrong Place!"

(Mesteño Draw Ranch, Mountainair, NM) Co-Sponsored by the Claunch Pinto SWCD and the Quivera Coalition. Instructor: Bill Bill Zeedyk - watershed consultant. For more information visit: www.quiviracoalition.org

MAY 20-24 River Network's 6th annual National River Rally

(Keystone Resort, Keystone, CO) This is a unique training opportunity for river conservation organizations and community-based watershed partnerships. Volunteers, board members, staff members, new and experienced community-based and tribal leaders all participate to hone their fundraising skills, learn new technical and programmatic skills and develop a renewed sense of purpose and energy. For more information visit: www.rivernetwork.org/rally

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