

# Watershed Notes

#### Fall/Winter 2008

### A "No Cost" Approach to a Flowing River

**1413 SECOND STREET** SUITE 3 **SANTA FE NEW MEXICO** 87505 505-820-1696

#### **Protecting**

Our River, Our Water,

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River Festival

No Cost Approach (continued)
Therapeutic Value of Water
Membership

**Upcoming Events** 

**Our Future.** 

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Chacó Michael

have released an average of 699 acre-feet of reservoir water per year, or 70% of the "living river" target of 1,000 acre feet. This average doesn't even count the exceptionally wet year of 2006 (when about 2,000 acre feet were released) but it does include the dry period of 2002/2003 when almost nothing was released. By committing to water releases ahead of time, and releasing the water very slowly, we would have a more-or-less living river, plus we would have the benefit of better flood protection, since the released water would create more flood buffer in the reservoirs.

The down side would be an increased risk of our reservoir water levels dropping below the usable level, and we would have to make up the difference with our groundwater wells. This is already the city strategy; our wells provide nearly 60% of our total water supply in normal years, with the Santa Fe River reservoirs providing the remaining 40%. With a bit of reservoir management, the mix of river water vs. groundwater could be adjusted to use more river water during wet periods and more groundwater during dry periods. And the groundwater would be in better shape, since the continuously flowing river would be recharging it.

#### The Numbers, Please

NEWS FLASH: We already have the "extra" water we need

for a flowing river! The water

and is released in quick spurts

has been hiding in our reservoirs

during the spring snowmelt and

summer storms. The releases are

so short, and the City's explanations accompanying them sound so authoritative, that we have

been lulled into the belief that more water and a real river are

impossible: "We live in a desert; there's not enough water for a

river; we have to keep all the wa-

ter in the reservoirs," etc.

Over the past seven years we

A monthly release schedule which mimics the natural flow pattern of the river (more flow during the spring run-off and the summer monsoon; less flow during the winter) is given in the figure below, totaling 700 acre feet over the year. The river's flow could be managed in response to precipitation, reduced during dry conditions, and increased when conditions relax. This would minimize the risk of "losing" water from the city water supply, which would then be made-up with small increases in groundwater pumping. For example, if the city's water supply would have been reduced by 105 acre feet due to releases from January through March, replenishing the city water supply with groundwater to make up for this lost water would require a 2.1% increase in annual pumping (based on 2007 figures). The risks, in other words, can be kept to a minimum through adaptive management on a monthly basis. Continued on page 7

Watershed Notes

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#### Where Does Your Water Come From? SFWA in the Classroom

What's a watershed? Where does our water come from? Where does stormwater end up when it runs down the street? Two new school programs help students learn more about their river and local environment.

"Water in the River," our program for 4th-6th grade students, demonstrates how storms affect our river and watershed using an interactive watershed model. Students follow the journey rain takes from the forests, streets, and roofs to our river. They learn about the pollution picked up along the way and what can be done to keep those pollutants out of the river.

"Beavers in the Santa Fe River" is a new program starting in January, for fourth grade students to learn beaver engineering and how this species impacts the Santa Fe River. SFWA is partnering with Earth's Birthday Project for classroom and field study about beavers, wetlands, and infiltration. In the Spring, it's off to the

Santa Fe Canyon Preserve to become beaver detectives in search of signs such as

The Watershed Model in Action

chewed trees, tracks, and scat and to discover first hand the riparian environment of the Santa Fe River.

These free school programs are made possible by grants from the Skylark Foundation and Newman's Own Foundation. For more information or to schedule a program for your school, contact Pamela at pamelad@santafewatershed.org.

#### Watershed Updates

#### SFWA Staff Departure...and Arrival

Our beloved "Adopt-the-River" Coordinator, **Marty Peale**, is moving to the Prajna Mountain Forest Refuge near Truchas, NM, where she will serve as caretaker and teacher with Upaya Zen Center. During her year with SFWA, Marty has energized and expanded the "Adopt" program, with new stretches, new signs, and new Stewards and Sponsors. We wish her all the best in her new life of wilderness and Zen practice. And we are happy to welcome our new staff member, **Mikki Anaya**, who will take over the "Adopt" program plus a range of other functions: volunteer coordination, public and government relations, special events, and some fundraising. Mikki will have the new job title of "Outreach Coordinator" to capture this

wide range of responsibilities. A native of Santa Fe with deep roots in the community, Mikki has extensive experience with local non-profit organizations including the New Mexico Acequia Association and the Santa Fe Farmers' Market and the Farmers' Market Institute. Please stop by the office to say, "Hello," or look for her at an upcoming outreach activity. Welcome, Mikki!

#### Santa Fe River Trail and Restoration Project

Groundbreaking for the trail was held on September 15th and a 2/3 mile stretch of trail is now under construction west of Del Rio Road (between Camino Alire and Frenchy's field). A map of the trail and proposed river improvements alignment is on the City's River Trail page at: www.santafenm.gov/index.asp?NID=1409.

#### Watershed Awareness Campaign

Have you seen these blue signs? Every river crossing in the City now has a sign identifying the Santa Fe River and Watershed. This winter, signs will be placed at river crossings in the County and at some watershed boundary points. Thank-you to Santa Fe Natural Tobacco Company for making these signs possible!

#### Habitat Restoration Grant

The Santa Fe Watershed Association has received a state River Ecosystem Restora-

tion Initiative grant of \$123,000 to restore a critical half-mile stretch of river channel above Two Mile Pond. In partnership with The Nature Conservancy and Watershed West, the project will result in a natural channel through the former reservoir areas of the Old Stone Dam and Two Mile Dam. The long-term plan is to utilize Two Mile Pond as a refuge for aquatic life (possibly including Cutthroat trout one day) and establish connectivity with the relatively good habitat of the river along Upper Canyon Road. See our website for the rather intricate project details: www.santafewatershed.org.



Watershed Sign along Alameda

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#### A Healthy Watershed: Who Benefits and Who Pays?

Santa Fe's "Municipal Watershed" refers to the forested mountain slopes feeding the upper Santa Fe River and filling the City's reservoirs. This area is managed by the Forest Service, an arrangement which has always seemed to make sense, since it is part of the Santa Fe National Forest. But the people benefitting from the Forest Service's management of this area are the City residents who use the water stored in the reservoirs. Shouldn't those same residents also pay for managing the forest?

It turns out that it's pretty expensive to do a good job of managing that forest. The federal government has paid around \$4 mil. for thinning to restore natural forest conditions and reduce the threat of catastrophic fire. With the forest now in good shape (after the remaining piles of slash are burned over the next year) how is the forest going to stay in good shape? Will the Forest Service apply the latest in scientific forest management techniques, including systematic "broadcast" burns to maintain the open character of the now-healthy Ponderosa forest? That's what the Forest Service would like to do, but they don't have the funds to support the intensive vegetation management that is needed to keep the forest healthy.

What to do? Over the past year, the Santa Fe Watershed Association has worked with the City of Santa Fe, The Nature Conservancy, and the Santa Fe National Forest (Espanola Ranger District) to formulate a long-term management plan comprising the activities deemed essential to the sustainable health of our municipal watershed. The annual cost of the recommended management activities ranges from about \$300,00 to \$400,000 per year (depending on certain details). The plan proposes to split forest management functions (monitoring water quality, public outreach) would be paid entirely by the City, perhaps through a fee charged to the city's water customers. This approach has the advantage of being transparent as well as educational. When water customers know some of their money is going to upper watershed management, they quickly become aware of the principles of watershed dynamics. The individual household bill, under this plan, would increase by between \$5 to \$10 per year.

What would water users get for their investment? A sense of security is one benefit, knowing that if a forest fire does occur in the watershed, it is not likely to cause any serious problems. Another benefit is that by having a financial stake in the management of the watershed, the community has a greater voice in the decisions that will affect their future. But the biggest benefit is fear-based. If we don't pay for managing the freshly-thinned forest and keeping it healthy, it will become over-grown again, with an increasing risk of a catastrophic fire that could destroy our reservoirs. We certainly don't want that option!

A draft of the management plan, along with the cost estimates, is available on our website. Go to <u>www.santafewateshed.org</u>, click on "Programs" and then "Upper Watershed" and you will find the plan. Your comments are welcome, and will guide us in finalizing the plan during the coming months. Our goal is a management plan that has the support of all stakeholders, and helps us acknowledge that we all share a common interest of living sustainably in our common watershed.

#### Fast Facts About The Santa Fe River

- The Santa Fe River is dry be cause it is completely impounded behind dams. When there is water in the river, it is due to stormwater and flood prevention releases from the reservoirs.
- Four dams have built on the Santa Fe River: Stone -1881; Two-Mile -1893; Granite Point -1926, renamed McClure in 1935 and enlarged in 1935 and 1995; Nichols - 1943.
- The two reservoirs, McClure and Nichols have a combined storage capacity of 3940 acre feet.
- Goats were used to pack the earth for the upstream side of Two-Mile Dam.
- Two Mile Dam was listed as hazardous in 1978, drained in 1992 and breached in 1994.
- In 1895, a hydroelectric plant using water stored in Two-Mile Reservoir was built. It provided Santa Fe with 100 kilowatts, four times the electricity of the steam generator on Water Street.
- Water meters were installed in 1930, significantly decreasing the amount of water used.
- A water treatment plant was built in 1975 after complaints of cloudiness, odors, and nematode worms.

#### Sources

Goldman, Don. 2003 *The Santa Fe River and Its Water.* The Nature Conservancy

New Mexico Office of the State Engineer

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#### Adopt-the-River Update

As our stewards begin to anticipate ice on the river banks, we'd like to thank them for their energetic and significant help this summer, providing "life support" for the river – removing debris and pruning invasive elm saplings to favor native cottonwoods and willow.

In addition to our stewards who turn out every month (or more), we'd like to thank a new sponsor and steward – Arrowhead Ranch, tending the proposed Siler Road extension. In mid-October, Arrowhead's owner, employees and clients pulled more debris out of the river on their first clean-up than any other single effort this year.



River Stewards Genzyme Genetics of Santa Fe

We'd also like to offer special thanks to Genzyme Genetics of Santa Fe, which turned out more than 25 employees and family members to help long-time stewards Barbara and Tobey King prune elms along the river at Patrick Smith Park in late September.

The County of Santa Fe is now an official supporter of the Adopt-the-River Program. We will be working in partnership with the Open Space and Trails Division in the three new County reaches: County owned land on both sides of the designated Siler Bridge site, San Ysidro Park, and the soon to be opened park at NM 599.

#### Adopt-the-River Sponsors and Stewards – and Reaches That Are Open for Adoption

#### City Reach

- 1: Audubon Center Cerro Gordo
- 2: Cerro Gordo Camino Cabra
- 3: Camino Cabra Patrick Smith Park
- 4: Patrick Smith Park Palace Avenue
- 5: Palace Avenue El Alamo
- 6: El Alamo Camino Escondido
- 7: Camino Escondido Delgado
- 8: Delgado Paseo de Peralta
- 9: Paseo Brothers Lane Bridge
- 10 Brothers Lane Bridge Old Santa Fe Tr.
- 11: Old Santa Fe Trail Shelby
- 12: Shelby Don Gaspar
- 13. Don Gaspar Galisteo
- 14: Galisteo Sandoval
- 15: Sandoval Guadalupe
- 16: Guadalupe DeFouri
- 17: DeFouri Closson
- 18: Closson Boys & Girls Club
- 19: Boys & Girls Club St. Francis
- 20: St. Francis  $1^{st}$  Footbridge
- 21:  $1^{st}$  Footbridge  $2^{nd}$  Footbridge
- 22:  $2^{nd}$  Footbridge  $3^{rd}$  Footbridge
- 23: 3<sup>rd</sup> Footbridge 4<sup>th</sup> Footbridge
- 24: 4<sup>th</sup> Footbridge Camino Alire
- 25: Camino Alire Ricardo
- 26: Ricardo Don José
- 27: Don José Camino Carlos Rael

#### New County Reaches

- 27: Siler Bridge Crossing Site
- 28: San Ysidro Park
- 29: Cottonwood Crossing to NM 599

Sponsor

Open Canyon Neighborhood Association Brindle Foundation Newman's Own Foundation Newman's Own Foundation McCune Charitable Foundation Karen Walker Real Estate Inn on the Alameda El Castillo Retirement Residences Inn & Spa at Loretto, and Mission Café & Sweet Shop Rotary Club of Santa Fe Open Inn of the Governors Santa Fe School of Cooking Los Alamos National Bank Outside Magazine Newman's Own Foundation Sheehan, Sheehan & Stelzner Watershed West Newman's Own Foundation Raincatcher, Inc. La Montanita Food Coop Open Turtle Mountain Newman's Own Foundation Newman's Own Foundation Newman's Own Foundation

Arrowhead Ranch Santa Fe Natural Tobacco Company Open Steward

Canyon Neighborhood Association Canyon Neighborhood Association The Chmar Family Barbara & Tobey King Carl Gibbs Carl Gibbs Carl Gibbs Carl Gibbs Carl Gibbs Inn & Spa at Loretto, Santa Fe Garden Club and Mission Café & Sweet Shop NM State Land Office NM State Supreme Court Building St. Elizabeth's Shelter Waldorf School Class of 2011 Rotary Club of Santa Fe REI (Recreational Equipment Inc.) Sierra Club Sierra Club Sierra Club Santa Fe Acceuil Dragonfly School La Montanita Grace Community Church Desert Academy Bosque de Torreon Neighborhood Assoc. Rio Vista Neighborhood Association Frenchy's Field Stewards

Arrowhead Ranch Santa Fe Natural Tobacco Company Open

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#### Fall/Winter 2008



#### The Second Annual Santa Fe River Festival Saturday May 31, 2008

It was another great festival with over 300 participants and a flowing river. There were live aquatic insects to observe, wildflower seed balls and energy conservation switch plates to create, dragonflies to design, river games to play, and rubbings of native plants to make. Multi-colored duckies raced down the river to the encouraging shouts of their owners. Information flowed about stormwater, water conservation, pollution prevention, fire safety, and the benefits of a living river. All of this fun was enhanced by the sounds of great samba and bluegrass music. A good time was had by all.

See you next year!



(photos by Julie Doolittle and Michael Chacón)







A big THANKS to all the people and organizations that made the River Festival a success: Volunteers: Doug Brown, Michael Chacon, Eileen Everret, Patty Hoban, Jerry Jacobi, Bart & Barbara Kaltenbach,

Patrick Noble, Tom Noble, Francois-Marie Patorni, Nancy Strong

Presenters: Camino Real River Connection, City of Santa Fe: Fire Department, River Commission, Parks & Watershed, and Water Conservation Departments, Concerned Citizens for Nuclear Safety, Earth Care International, Earth Works Institute, High Desert Angler, New Mexico Environment Department-Surface Water Quality, Interstate Stream Commission, Quivira Coalition, River Source, Roots & Shoots, Santa Fe Mountain Center, US Forest Service, Wildlife Center, YouthWorks!

Music: Gary Schiffmiller and Friends, Samba Fe, Raising Cane

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* Special Thanks	to Our Donors	* *
<ul> <li>Biophilia Foundation</li> <li>Elliott Family Fund</li> <li>William H. &amp; Mattie Wattis Harris Foundation</li> <li>Hilton Santa Fe Historic Plaza</li> <li>Inn of the Anasazi</li> <li>Newman's Own Foundation</li> </ul>	Santa Fe Land Use Resource Center Santa Fe Natural Tobacco Company Skylark Foundation Tides Foundation Timken Family Charitable Trust	*****
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"In the 19th century, we devoted our best minds to exploring n	ature. In the 20th century, we devoted ourselves to controlling	
and harnessing it. In the 21st century, we must devote ourselve	s to restoring it." Stephen Ambrose	

Stephen Ambrose

#### age

#### Watershed Notes

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#### Summer Storms

This is the Santa Fe River after a July storm which overfilled the reservoirs allowing millions of gallons of water to flow over the dam and downriver.

With small consistent releases of water from the reservoirs, this type of spill would be less likely. A low flow in the river would also allow for the restoration of the river channel and banks, the reestablishment of native plants, and prevent the erosion and loss of soil that you see here.

> Photo taken by Lars Anderson of the Santa Fe River at Del Rio Road July 2008

#### Life is a River by Alexander M. Giorgio

There are times in our lives when stress, family and work obligations, our financial difficulties and the disarray of our local and national communities engulf us in such despair that hope becomes nothing more than an illusion. In such times, become like water. Water doesn't do battle with the obstacles it encounters. Water gently seeks a way around, under, over and through them as it makes it's way back home to the sea. Water doesn't try to change the problem it faces, but rather embraces it and moves beyond it. And yet, through water's gentle action, problems are eroded and obstacles fall away.

We are all drawn to a flowing ribbon of water as it picks the path of least resistance on its journey home. Sitting next to this living being something inside us begins to flow as well. With each eddy that swirls around a small branch or the song played for us on the stones as the river passes by, we are invited to live again. To breathe. To be.

It is no accident that the health and vibrancy of a community can be judged by the life of the river flowing through it. Living rivers invite healthy communities. I would go even further. A living river is the catalyst from which a thriving community is shaped and molded and brought to life. A stagnant or non-existent river portends a community's fate. For if a community cannot care for and nurture the life of a simple ribbon of water, how can it ever expect to care for and nurture its children or elders, its crops and its markets.

Yet how can a river flow when there isn't enough water for everyone? Perhaps there is enough water if we know how to take care of the river. But to take care of the river, we must be willing to take care of our lives as well. And then there will be enough. Enough water for the river. Enough peace within our lives.

I invite you to sit by our river, your river, today. Right now. And see if it doesn't sing you a song of hope. For when we sit down beside the running river, with all our problems and despair, there is enough. There is enough sweet, moist air to breath. There is enough soft grass for animals to taste. There is enough room between the crevices of our personal obstacles for the water to flow through. And then a wonderful thing happens – hopelessness gives way to hope, enough hope for all of us.

*Alex Giorgio* resides in Santa Fe, New Mexico with his daughter, dog and two cats. He is a psychotherapist, business consultant, author and artist. Alex creates biomedical water features for clinics, spas and other corporate and residential healing environments as a tool for health care providers to teach entrepreneurs, entertainers and CEOs how to "fly by the seat of their hearts." As a thank you for supporting our Santa Fe river, you can download a free copy of Alex's audio, **SpeedRelaxation: The Seven-Minute Miracle** for those times when you simply can't make it to the river to relax. Please go to <a href="http://typeE.com/">http://typeE.com/</a>

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#### We Need You!

As a membership organization, we depend on our members to help us continue our mission to restore the Santa Fe River and watershed. Membership entitles you to:

- Discounted or free hikes, workshops, events;
- Our newsletter with email updates on restoring a living river; and
- A SFWA bumper sticker: "Support a Living River"

#### Memberships

Individual:		Business:	
Member	\$25	Member	\$100
Friend	\$50	Friend	\$250
Supporter	\$100	Supporter	\$500
Donor	\$250	Donor	\$1,000
Benefactor	\$500	Benefactor	\$2,500
Patron	\$1,000+	Patron	\$5,000+

#### A Special Thanks To All Our Members

Alison Amann, Helga Ancona, Karen & Fred Bailey, Jim Archibald, Joni Arends, Catherine Baca, Karen & Fred Bailey, Lisa & Gregg Bemis, Lee Berry, Kim Birdsall, Whitney Bacon & Tanja Bulle, Shelley Robinson & Tom Buscher, Chris & Carol Calvert, Michael Chacon, Polly Chase, Matthew & Julie Chase-Daniel, Henry Chavez, Jr., Tod & Linda Chmar, Keith Clark, Greg Cole, Kenneth Collins, Doug Conwell, Irwin & Florence Cromwell, Pat Culbert, Ellen Casey & Suella Domres, Julie Doolittle, Peggy J. Doolittle, Cam Duncan, James H. Duncan Jr., Eric Riebsomer & Shannon Duran, Megan Dyer, Earth's Birthday Project, Rob Elliot, Hal Espen, Eileen Everett, Eliza Frank, Vickie Gabin, Bruce & Margaret Gallaher, Tom Gallegos, Lynn Gary, Charles & Rose Gibbs, Marian Graves, Ben Haggard, Amanda Hargis, Mary Harrington, Lois Herrmann, Elizabeth Hightower, Dick Hogle, Alan Hook, Alona Howard, Ken Hughes, Joseph Hughey, Instream Flow Council, Jack Jackson, Gerald Jacobi, Jan-Willem & Ariel Jansens, Duskin Jasper, Tom & Carlyn Jervis, Maria Johnson, Robert Francis Johnson, Norman R. Karczmarek, M.D., Bart Kaltenbach, Emily Kaltenbach, Carol F. Keeffe, Daniel T. Kelly, Diane Kenny, Bob & Doris Krause, Larry Krauss, Dennis & Jet Lacoss, Mike Lara, Carolyn Lee, Laurie Letter, Ouida MacGregor, Lee & Susan MacLeod, Kimberly MacLoud, Bob Mang, Isaac & Darlene Martinez, Norma McCallan, Helen McDonald, Janet McVickar, William Mee, Elizabeth Millard, Barbara Mueller, Dwight Nibbelink David & Ruth Noble, Tom Noble, Sheila Ortego, John Otter, François-Marie Patorni, Michael Patrick, Marty Peale, Susan L. Perley, Mike Pertschuk, Jane W. Petchesky, Roger S. Peterson, John Pfeil, Dale Pontius, Bruce Poster, Ron Press, Alan Ragins, Edward and Melanie Ranney, Carlie Lines & B.C. Rimbeaux, Marcia Rodda, Melinda Romero-Pike, Steven M. Rudnick, Santa Fe Garden Club, Richard & Gayle Saunier, Marsha Scarbrough, Richard & Carol Schrader, Rabbi Marvin Schwab, Service Master of Santa Fe, Marian Shirin, Ron Simmons, David Ehrman & Susan Spinell, Karyn & Justin Stockdale, Stone Forest, Nancy Strong, Margaret Sullivan, Jeffrey Sussmann, Karen & Bob Sweeney, The Commons on the Alameda Homeowners Association, Mike Tompson, Tanna Treas, Judith Turley, John Utton, Suzanne Vigil, Cynthia West, Rosilee Winn, Chris Wuest, Hank Yeiser, Kurt Young, Marjorie Young.

#### *No Cost* continued from front page

In a wet year, releasing water on a regular basis will free up reservoir space that will be filled by rain and melting snow, effectively increasing the storage capacity of the City without any new construction. In a dry year, releases of water into the river could be curtailed . In any case, the water released will provide valuable services both to the aquifer and to the river corridor ecosystem.

It takes a relatively small amount of water to bring our river back to life, and the same water that saves the river does double and triple duty in providing a park-like environment above while recharging our aquifers below. There are some risks, but they can be monitored month by month. In low precipitation years we would need to increase groundwater pumping by a few percent. In high precipitation years we could actually harvest more water in total because infiltration from the flowing river would recharge the aquifer (a type of storage), freeing up space in the surface reservoirs to capture more water, which might otherwise spill.

— David Groenfeldt, SFWA Executive Director

<sup>1</sup>In 2007, the City used 5,005 acre feet of ground water pumped from wells inside the city limits (1,211 ac ft) and from the Buckman wells (3,794 ac ft).

Month	Hypothetical Acre Feet/ Month
January	24
February	29
March	52
April	107
May	167
June	73
July	32
August	91
September	34
October	33
November	34
December	24
Total	700



 Dolres Maese

Senator Bingaman with Santa Fe Watershed staff and board member, Santa Fe National Forest and City Water Division Staff.

On Monday, October 6th, Senator Jeff Bingaman was in Santa Fe to get a firsthand look and tour the Santa Fe Watershed Restoration Project.

Bingaman secured a total of over \$7 million since fiscal year 2002 to help improve and restore the overall health of the forest and watershed. "Forest restoration is important in maintaining a healthy watershed and I am pleased the Santa Fe Watershed Association is making this a priority," Bingaman said.

See page 3 for more about the Upper Watershed Community Forest Restoration Program.

## Save the Date!

Protecting Our River, Our Water, Our Future.

Santa Fe River Walk ~ Saturday, December 6th, 2008 10:00-12:00 pm – Old Santa Fe Trail and the river How did the river get that way? What did it look like a hundred years ago? Come along for a stroll along the river and discover the history of the Santa Fe River. Love Your River Day ~ Saturday, February 14th, 2009

9:00-12:00 pm - All along the river, kick-off at Frenchy's Field Barn Join Adopt-the-River stewards in our annual winter river clean-up. There will be hot beverages and snacks to get you going and eight miles of river to clean-up!

Rainwater Harvesting ~ Tuesday, February 24th, 2009 7:00 – 9::00 pm - location to be announced Brad Lancaster will present on how to turn water scarcity into water abundance through the harvest of rainwater, greywater, and stormwater.