

SPRING 2015

A WATERSHED MOMENT

A Newsletter of Watershed Management Group



watershedmg.org



What's Inside...

Pg. 3: Living Lab
Fall Events

Pg. 4: Campaign Alert:
Restore Sabino Creek

Pg. 7: Shallow
Groundwater 101

Pg. 10: Living Without
the Well

Pg. 12: 5 Steps to be a
Well Steward

Pg. 14: Meet WMG's
Phoenix Stewardship
Committee

What Story Do you Want for Sabino Creek?

The story of Sabino Creek, like many desert rivers, is a story of loss and drying up. But we have a choice. We can shift our role in the story and choose to revive our creeks and rivers. The new story begins here.



Board of Directors

Jim Kirchoff, President
Joan Hall, President-Elect
Jennifer Mills, Treasurer
Amy McCoy, Secretary
Georgia Ehlers
Mead Mier
Bill Wilkening

Staff

Lisa Shipek, Executive Director
Andrew D'Arezzo, Project Manager
Elva De La Torre, Program Director
James DeRoussel, Program Manager
Trevor Hare, Project Manager
Sky Jacobs, Administrator & IT Manager
Cidney Jones, Design Engineer
& GIS Technician
Brad Lancaster, Sr. Watershed Specialist
Joaquin Murrieta-Saldivar, Project Manager
Karilyn Roach, Sr. Communications Associate
& Program Coordinator
Catlow Shipek, Sr. Program Manager
Kieran Sikdar, Program Manager
Joe Silins, Project Manager
Emma Stahl-Wert, Program Coordinator
Stephen Thomas, Grants & Events Coordinator
Ryan Wood, Program Manager

Newsletter Credits:

Writing & Editing: Karilyn Roach, Stephen Thomas, Lisa Shipek, Catlow Shipek, & Ericka Cero Wood
Graphic Design: Cero Wood Graphic Design, Inc.



Dear Readers

WMG launched our Restore Sabino Creek campaign on Arizona Gives Day, April 7th, 2015. WMG's donors showed support for our vision in a big way, donating \$44,000 and pushing WMG into 1st place—earning us a \$15,000 prize for raising the most dollars among mid-sized nonprofits across the state. This is the 3rd year in a row our donors have taken us to 1st or 2nd place for most dollars raised, demonstrating water as a top issue.

In order to achieve bold results, you need a bold vision, concrete goals, and then strategic action. In 2013, WMG announced our 50-year program to restore Tucson's heritage of year-round, free flowing rivers. The campaign to restore Sabino Creek is one of our first strategic efforts to achieve that goal.

In fact, we are committed to restoring flow to the West's rivers through all our programs, including our continued work in Sierra Vista and Phoenix. From the Santa Cruz to the San Pedro to the Gila—all these systems connect us to the mighty Colorado River. The Colorado River sustains 40 million people across seven states and two countries, while supporting the plants, animals, and ecosystems that make the West unique. We invite you to learn more about our work to protect our corner of this grand watershed.

Sincerely,

Lisa Shipek
Executive Director

Get to Know... Jim Kirchoff, WMG Board President Attorney, King & Frisch, P.C



How did you first get involved with WMG? I joined WMG's Green Living Co-op several years ago and have enjoyed working at Co-op workshops whenever I can. It's such a great experience that I encourage everyone to join the Co-op and host a workshop at their own house.

Why do you serve on the board of directors? I joined the board because I wanted to help promote WMG's work and mission which are vitally important for those of us living in the desert.

How has WMG impacted you personally? I now see every roof, yard, park, street median, right-of-way, etc. as an opportunity to capture rain and add beauty to our cities. Through WMG I have connected with a great community of people who value working together to incorporate sustainable practices into our modern way of living.

Experience the Living Lab & Learning Center!

We are excited to offer more opportunities for you to visit the Living Lab & Learning Center and learn from our demonstrations. You can register for a monthly tour to learn about rain gardens, tanks, greywater systems, passive solar, food forests, native gardens, composting toilets, and more! Or join us for our free monthly classes on rainwater or greywater harvesting that qualify you for rebates from Tucson Water. Receive all our event announcements and other Living Lab news in your email inbox by signing up for our Tucson Action Bulletin.



Our young food forest is fed by rainwater and greywater—it's already producing fruit, herbs, and seasonal vegetables.



The Plaza is our largest outdoor classroom featuring a 10,000-gallon underground tank, strawbale benches, native canyon landscape, and artistic shade trellis.



The adobe porch has become an intimate space for meetings and social time, with the recently restored adobe building, a trellis providing lush shade, and view of the food forest.

Mark your calendars for these great Fall events at the Living Lab!

Restore Sabino Creek Campaign Party

September 17, 2015, 5:30 – 7:30 p.m.

Celebrate the story of Sabino Creek with speakers, photos, and videos, and get involved with WMG's campaign to restore year-round flow to this desert gem.

Homescape Harvest Tour

October 17, 2015, 10am – 3pm

Tour the Living Lab and more than two dozen homes and businesses that demonstrate sustainable and resilient desert living.

Edible Shade Mesquite Pancake Breakfast

November 22, 2015, 9am – 12pm

Enjoy a delicious mesquite pancake breakfast and so much more—the Living Lab will be buzzing with energy, local music and vendors, native tree distribution, porch presentations, and kids' activities.

The Living Lab is Evolving!

We've been installing projects with your help for the last two years at the Living Lab, and the progress is tangible! The growth of our plants is incredible, and now we can enjoy several inviting outdoor classroom spaces.

The list of exciting projects continues for 2015. We plan to plumb our 10,000-gallon underground tank to meet our indoor water needs; build a bike ramada for secure, covered bike parking; install educational signage; create more outdoor classrooms; and bring chickens to the Living Lab in a new chicken coop fitted with a kitchen compost system.

CAMPAIGN ALERT: *Restore Sabino Creek*



Photo from Sabino Creek area resident Brad Hughes.

Just 60 years ago, water flowed in Tucson's creeks and rivers. But today, residents and visitors see the dry riverbeds and washes as the norm. Watershed Management Group wants to shift this paradigm and begin to revive a more vibrant story—one where people are again connected to our heritage of flowing desert rivers.

WMG is beginning to rewrite the story with a community campaign to restore surface flows and riparian habitat at Sabino Creek. Tucson owes its existence to vital waterways like Sabino Creek and the larger Santa Cruz River. These reliable water sources allowed early settlers to establish some of the oldest—and most continuously cultivated—agricultural settlements in the U.S.

Sabino Creek used to flow almost year-round, providing a dependable source of water to plants and animals that were once more abundant in this corner of the Sonoran Desert. Groundwater pumping and persistent drought have significantly depleted flows, reducing this once-perennial stream to an ephemeral waterway that now flows for its full extent only after large storms.

The good news is that restoring the flow to Sabino Creek is not an impossible task. The creek is supported by a pocket of shallow groundwater, which means groundwater levels can recover rapidly with reduced pumping from nearby wells and recharge with local infiltration. Local scientists, policy makers, and community members strongly support WMG's restoration efforts and are partnering with us to make this vision a reality.

WMG's campaign in action

The campaign to restore Sabino Creek is the first targeted effort in WMG's larger 50-Year Program to restore our desert rivers. WMG staff are already hard at work on the campaign's three primary strategies:

1. Creating a watershed plan to restore Sabino Creek through a stakeholder advisory group. This group meets monthly and is facilitated by Senior Program Manager Catlow Shippek
2. Building interest and awareness about restoring Sabino Creek through videos, social media, online resources, and public events. These efforts are led by Senior Communications Associate Karilyn Roach, Project Manager Joaquin Murrieta, and Executive Director Lisa Shippek.
3. Leading advocacy on behalf of Sabino Creek through: 1) youth engagement in a new River Stewards program; 2) strategic meetings with city, county, and water utilities; and 3) policy work in partnership with the Community Water Coalition.

You can speak for our rivers. Join our efforts to protect and restore our precious riparian areas. Visit our website to sign up for WMG's River Restoration action alerts with advocacy opportunities, announcements for stream restoration workshops, and special events to celebrate our rivers!

Sabino Creek Shallow Groundwater Advisory Committee

WMG is leading a broad-based committee to develop strategies to preserve and enhance the Sabino Creek Shallow Groundwater area. The main objectives of this committee are to:

- Establish communications among landowners, jurisdictions, and interested parties
- Develop a watershed plan that outlines and prioritizes strategies for enhancing and promoting stewardship of the Sabino Creek Shallow Groundwater area

Committee members:

Chris Baldyga, HydroGeophysics, Inc.

Catherine Compagno, Sabino Creek area resident

Julia Fonseca, Pima County Office of Sustainability and Conservation

Gary Hix, Sabino Creek area resident and well consultant

Janice Hughes, Pima County Regional Flood Control District

Stephen Husman, UA Cooperative Extension

Mead Mier, Pima Association of Governments

Louise Misztal, Sky Island Alliance

Warren Tenny, Metro Water

Wally Wilson, Tucson Water

Beth Woodin, Sabino Creek area resident

**Learn more about our
Restore Sabino Creek campaign
and watch videos about
the campaign at
watershedmg.org/rivers/sabino**



Neighborhood children collect critters and play in Sabino Creek. Courtesy Brad Hughes.

Jeffrey Odefey

Director of Clean Water Supply Programs, American Rivers

American Rivers is a national non-profit powerhouse working to protect wild rivers, restore damaged rivers, and conserve clean water for people and is an important partner in WMG's campaign to restore Sabino Creek.



American Rivers
Rivers Connect Us



Q: Why did American Rivers want to partner with WMG on the Restore Sabino Creek campaign in Tucson?

A: We were drawn to WMG's regional reputation as a leader in rainwater harvesting and green infrastructure. Your vision for a thriving, shady, water-rich community perfectly matches our own values and the future we're working toward in the Colorado River Basin.

Q: How does WMG's Sabino Creek work complement American Rivers' mission?

A: Especially in this new era of enduring drought, we believe that local action is a necessary complement to larger scale policy development. Restoring Sabino Creek through greater rainwater harvesting and water conservation demonstrates perfectly the kind of change we seek to inspire across the region. Hopefully, we can build on this success to shape better water management policies at the state and federal level.

Q: Briefly describe the role of American Rivers in this campaign. Do you see your presence in this region growing? How and why?

A: We're cheerleaders, and supporters, and connectors...we like to think of ourselves as being a bridge that links WMG's community-centered work to the larger Colorado River Basin. We're here to tell the story of this work to broader audiences, to motivate other cities and water districts to follow the example we set in Tucson, and to build from our initial partnership toward a healthy, free-flowing Santa Cruz River.

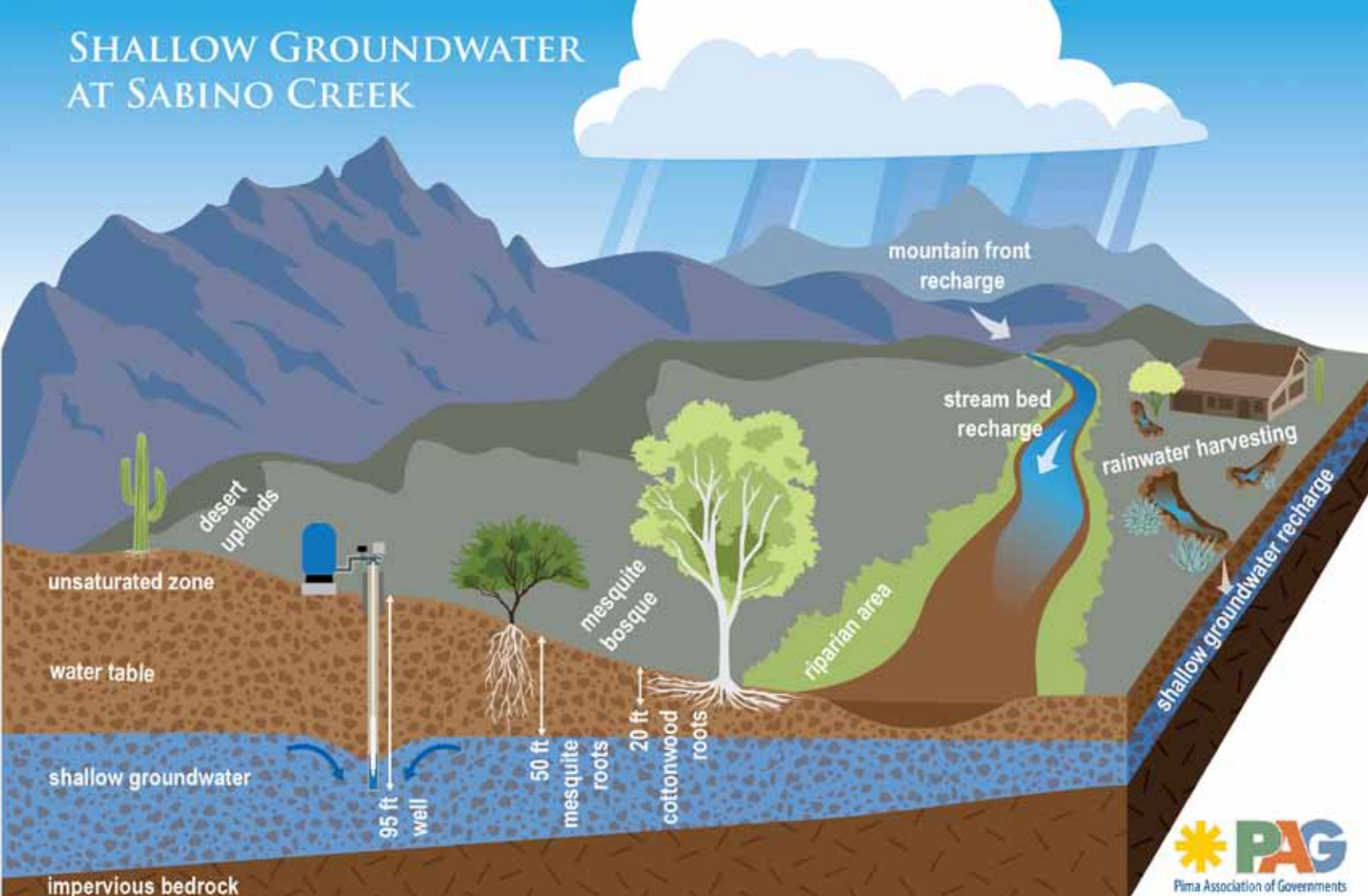
Q: Anything else you want to share?

A: On a personal level, working with you all just makes me smile. I get a tremendous amount of satisfaction being associated with WMG's creative approaches to water issues in Tucson and your commitment to improving the community. And Sabino Creek is just beautiful!!



Jeffrey visits Sabino Creek with Sr. Program Manager Catlow Shipek and WMG Board Member Amy McCoy.

SHALLOW GROUNDWATER AT SABINO CREEK



SHALLOW GROUNDWATER 101: WHAT IS IT AND WHY DOES IT MATTER?

Shallow groundwater is water found within 50 feet of the land surface—vital for supporting the native mesquite bosque, willow galleries, ash and hackberry trees, and bunch grasses associated with desert riparian habitats. In the Tucson Basin, groundwater this shallow only exists in small pockets, usually underlying our creeks, rivers, and springs.

Tucson receives only 12 inches of rain per year—that's not a lot! These unique pockets of shallow groundwater provide a reliable source of water that is easily accessed by the roots of trees, shrubs, and other native plants, creating lush ribbons of green in the desert. These green corridors provide essential habitat for many of the region's most precious animals, including endangered and threatened birds, lizards, fish, frogs and toads, and larger mammals like the jaguar and ocelot.

Before modern development and population growth led to increased pumping of our aquifer, groundwater used to be expressed on the surface in many more areas, feeding perennial rivers, creeks, and springs throughout the Tucson Basin.

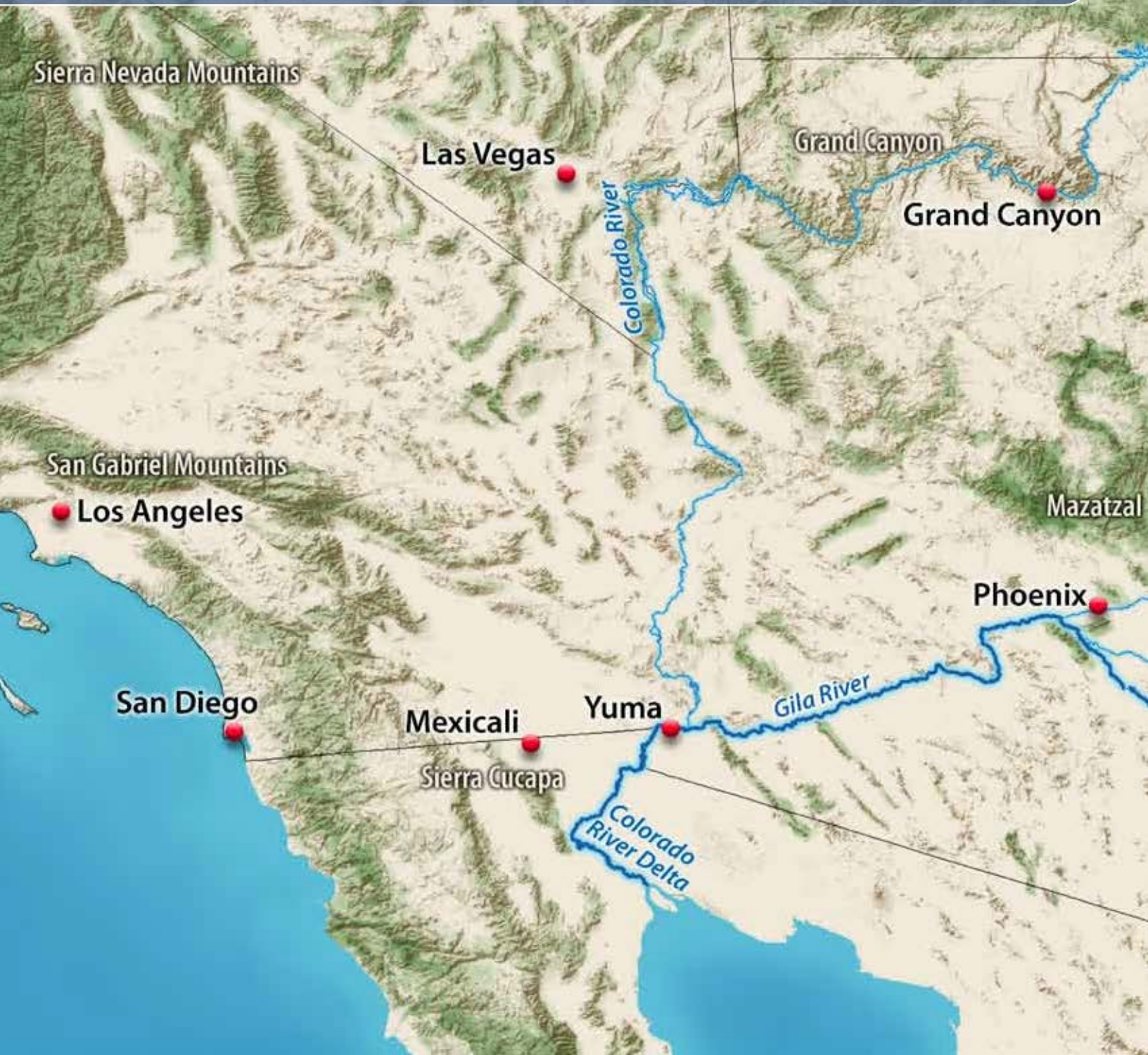
Now our remaining shallow groundwater dependent streams are suffering. We are pumping water out of these small reserves faster than nature can replenish them. And when we pump too much, groundwater is lowered to the point where it becomes disconnected from the surface flows—drying up our streams and becoming inaccessible to the roots of trees and other riparian plants.

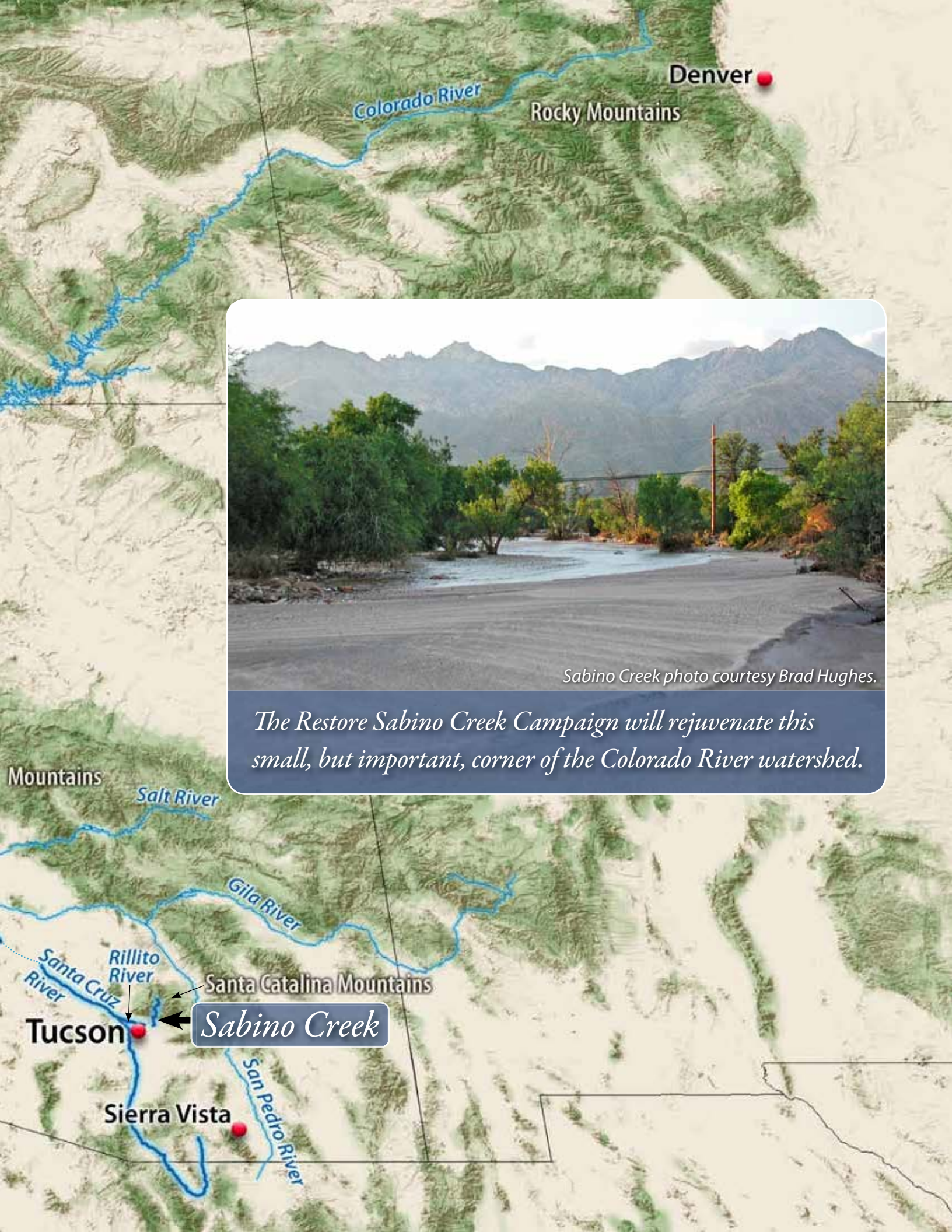
By working to replenish areas of shallow groundwater, we can restore the habitat provided by these riparian areas and revive the diversity of species that makes the Sonoran Desert so special. Restoring our creeks and rivers will make Tucson a more vibrant and livable community, provide cool respites from the urban environment, and promote tourism and recreation that feed the local economy.

From Sabino Creek to the Colorado River

Sabino Creek creates a vibrant ribbon of green in the desert foothills of the Santa Catalina Mountains, north of Tucson, before it flows into the Rillito River, which in turn feeds into the Santa Cruz River. As the Santa Cruz River flows north it feeds into the Gila River, which eventually joins with the mighty Colorado River, linking Tucson's watershed to the highest peaks in the Rockies and the coastal delta in Mexico.

We are uniting with a broader movement of community groups, agencies, businesses, policy makers, and residents to protect and enhance the Colorado River and its many tributary creeks and rivers.





Sabino Creek photo courtesy Brad Hughes.

The Restore Sabino Creek Campaign will rejuvenate this small, but important, corner of the Colorado River watershed.

Sabino Creek

LIVING WITHOUT THE WELL: A Model Household Sustained By Rain



Jay & Carol's water needs are met entirely with rainwater, including their pool!

Jay Cole & Carol Townsend

For many water-conscious homeowners in the Southwest, the question often arises, “How can I live more sustainably in a desert environment?” WMG supporters Jay Cole and Carol Townsend took on this challenge 12 years ago when they began building their dream retirement home in the Tucson Mountains. Situated outside of water utility service areas, their new abode would not have the luxury of relying on municipal water pumped in from the distant Colorado River. **Instead, Jay and Carol had a different—some would say ambitious—vision in mind: a home that meets 100% of its water needs with rainfall.**

This bold idea was sparked by a humbling personal experience. While working as biologists in Guyana, a nation on the Caribbean coast of South America, Jay and Carol lived in a small house supplied entirely by rainwater harvested from their rooftop—drinking water and all. Depending exclusively on rainfall for their water needs had a powerful effect on how they viewed their relationship to this precious resource.

“When you have all your water sitting in a tank outside, you really start thinking about how you use it day to day,” says Carol. “We knew we wanted to try living this way in our own home.”

The couple set to work designing a house that would be completely water self-sufficient and still support some modern amenities, including a swimming pool. This would require a big cistern and ample roof surface to fill it. Working from plans found in an issue of *Fine Homebuilding* magazine, they contracted with a builder to construct their grand experiment: a 26,000-gallon underground cistern complete with a filtration and water pressure system. At nearly 19 feet in diameter and 10 feet deep, they hoped the massive tank would be enough to supply all their water needs.

A decade later, Jay happily reports their experiment has been “phenomenally successful.”

The system has never gone dry. One summer before the monsoon rains, he recalls, the water level in the cistern had fallen to just 2 feet. They scaled back their water use by not planting a winter garden; by the following January, the tank was back to overflowing.

“If we had a 50% reduction in rainfall, we would just stop using the pool and watering the garden beds,” says Jay, “and we’d have enough water to live on.”

Initially unsure if they could meet their needs on rainwater alone, Jay and Carol also drilled a well on the property. As Jay points out, wells can be an expensive gamble. The water table could be far below the surface, adding to drilling costs. Water quality can also be poor, and wells can dry up over time. In their case, the well produced extremely hard water that was high in minerals and not useable to supply their home.

After crunching the numbers, they found the price of drilling a well and installing their cistern was comparable. But a rainwater-harvesting system has added benefits that make it a better overall investment: it isn’t likely to permanently go dry and water quality is far less questionable, says Jay. Also, the over-pumping of wells can lead to groundwater depletion, which can have negative environmental impacts. He believes the positives of rainwater harvesting outweigh the uncertainties and environmental downsides associated with wells.



A filtration system cleans stored water for potable use

Eager to share their experiences and successes with others, Jay and Carol often give tours of their property and speak about rainwater harvesting at public events. They would like more people to realize the untapped potential of collecting the water that falls from the sky.

“When I look out at the rain sweeping across Tucson, all I can think is, *Catch it!*” says Carol.



Jay & Carol stand proudly by their 26,000 gallon underground tank.

In addition to their enthusiastic role as spokespeople for rainwater harvesting, Jay and Carol are strong supporters of Watershed Management Group. When asked why they give financially to WMG, Carol says it comes down to one thing: action.

“WMG does a lot of talking—but they back it up with a lot of *doing*! This is so important for our desert community and our world right now with the challenges we face. It’s exactly what people should be doing.”



Do you have a spring, creek, or river running near your home? Within a few miles? If you are on a well, chances are you are pulling water from the same source as the creek nearby. The groundwater you use for showers, laundry, and other daily activities comes from the same underground pool of water that connects to surface flows and supports healthy trees and plants.

In order to ensure your springs, creeks, and rivers continue to flow, it's important to understand how much water you can safely draw from your well to remain in balance with recharge. In areas of shallow groundwater, water more easily and quickly recharges, because it is connected to seasonal infiltration from local rainfall.

Think about wise financial investments. The best investment portfolio has a diversity of options and not all your eggs are in one basket. The same is true for your water portfolio. Think about diversifying your sources of water to reduce the amount of water pumped from your well. Luckily you can tap into a variety of free water sources, including rainwater, greywater, and stormwater!

Want to learn more? Attend one of WMG's classes or hands-on workshops. Or request a consultation. We can provide a custom consultation service for well owners with special considerations for your unique water needs.

Protect Your River



Five steps to be a Well Steward and Enhance Your Local River:

1. Transform your landscape into a rainscape. Do you irrigate your yard with well water? If so, create a 3-year plan to transition your yard to a rainscape. You will need to create a water budget that matches your annual rainfall to your landscape water needs. The easiest way to do this is to use native plants. If you want to grow food, then you'll need to store water in tanks to last through the dry season.
2. Make your yard a sponge! Create a yard that harvests and sinks rainwater, stormwater, and greywater into the soil. Not only will your plants thrive, but you may even increase the amount of water that infiltrates into the soil to recharge groundwater. Create basins, berms, swales, and terraces, so that not a single drop of rainwater leaves your property! The closer to its source that rainwater and stormwater infiltrate the less opportunity there is for that water to evaporate and be lost to the atmosphere.
3. Use rainwater to wash your laundry. You might be able to harvest enough rainwater off your roof to meet your indoor water needs, like Jay Cole and Carol Townsend on page 10. Rainwater-harvesting tanks can be plumbed indoors with proper filtration to use for all your indoor needs—including drinking!
4. Convert to waterless toilets. 20% of household water is used to flush away waste. You can stop flushing away water by switching to a composting toilet. Composting toilets can be designed for an indoor or outdoor setting to suit your needs. And if you are on a septic system near a stream, then less poop water moving through your septic may even improve downstream water quality.
5. Switch to a municipal water supply. Do you have a nearby water utility that can provide you service? This may be a good option if you are in a sensitive groundwater area and your water utility is supplying water from a more renewable water source.

Balance Your Water Budget to Keep the Water Flowing



Schedule your consultation or conceptual design plan today!

WMG will match your water needs with a renewable, sustainable water supply and significantly reduce your municipal or well water demand.

**Visit watershedmg.org
or call 520-396-3266.**

WMG's Phoenix Stewardship Committee



Left to right, back to front: Jennifer Wadsworth, Bill Banks, Matt Newton, Jo Miller, Robert Ray, Kaylee Coulter, Ryan Wood, Einav Henenson, Ericka Cero Wood.
Inset: Kim Afinowich



Since 2011 when WMG launched programs in Phoenix, we've discovered a huge amount of untapped water-harvesting potential. The past four years have seen WMG's presence grow and branch out with Co-op workshops, Green Streets projects, and educational events across the Valley.

Ryan Wood has been at the helm since the beginning and is WMG's only Phoenix-based staff member. He doesn't do it all alone though. For the last year or so he has enjoyed behind-the-scenes support from a team of community leaders. **The Phoenix Stewardship Committee has built new relationships with community groups, municipalities, and organizations to bring WMG's work to broader audiences and grow our presence across the metro area.**

While their title seems all business, the committee has a lot of fun creating events and volunteering their skills. With backgrounds as varied as graphic designers, government employees, college students, and retirees, the committee members share an appreciation for water as the common thread that ties everyone and everything together.



WMG is a cause with action I want to further. It's an honor to be a part of the committee. It has been uplifting to find other like-hearted people who lend their time and labor to help each other.

~ Matt Newton

Matt and fellow Phoenix Co-op members manning the booth and the "Wheel of Water" at the 2015 Sustainability Solutions Festival, The Sustival.

– the crew behind the scenes

WMGeocachers

If you have attended a potluck pancake home tour breakfast, enjoyed the “Wheel of Water” game at a local event, shared a WMG meme on Facebook, or discovered a Phoenix WMG project geocache, you have experienced the committee in action. Because of their work to engage new audiences, more and more people are getting involved and picking up shovels. It’s a big city out there, and their droplets of enthusiasm have rippled out across the Valley.

Summer is coming, but this committee won’t rest. They are hard at work right now planning activities, so keep your eyes peeled and your ears to the ground—you just might spot one of these rainwater-harvesting, community-building superstars at an event near you. Make sure you don’t miss a beat—sign up for WMG’s Phoenix Action Bulletin on our website, and be sure to let your friends know that water harvesting has come to the Valley of the Sun.

Kim talking about her water harvesting during a potluck pancake home tour breakfast in March.



Kaylee and Ryan accepting the big check for Arizona Gives Day.

“Serving on the Stewardship Committee has helped me to consider sustainable desert living from different perspectives. Growing our membership requires finding a way to communicate the mission of WMG so that it resonates with people of different interests, desires, and motivations. The more I find myself talking about WMG the more excited I am about what we do!”

~Kaylee Colter

Jennifer and a very happy raffle winner from the potluck breakfast.

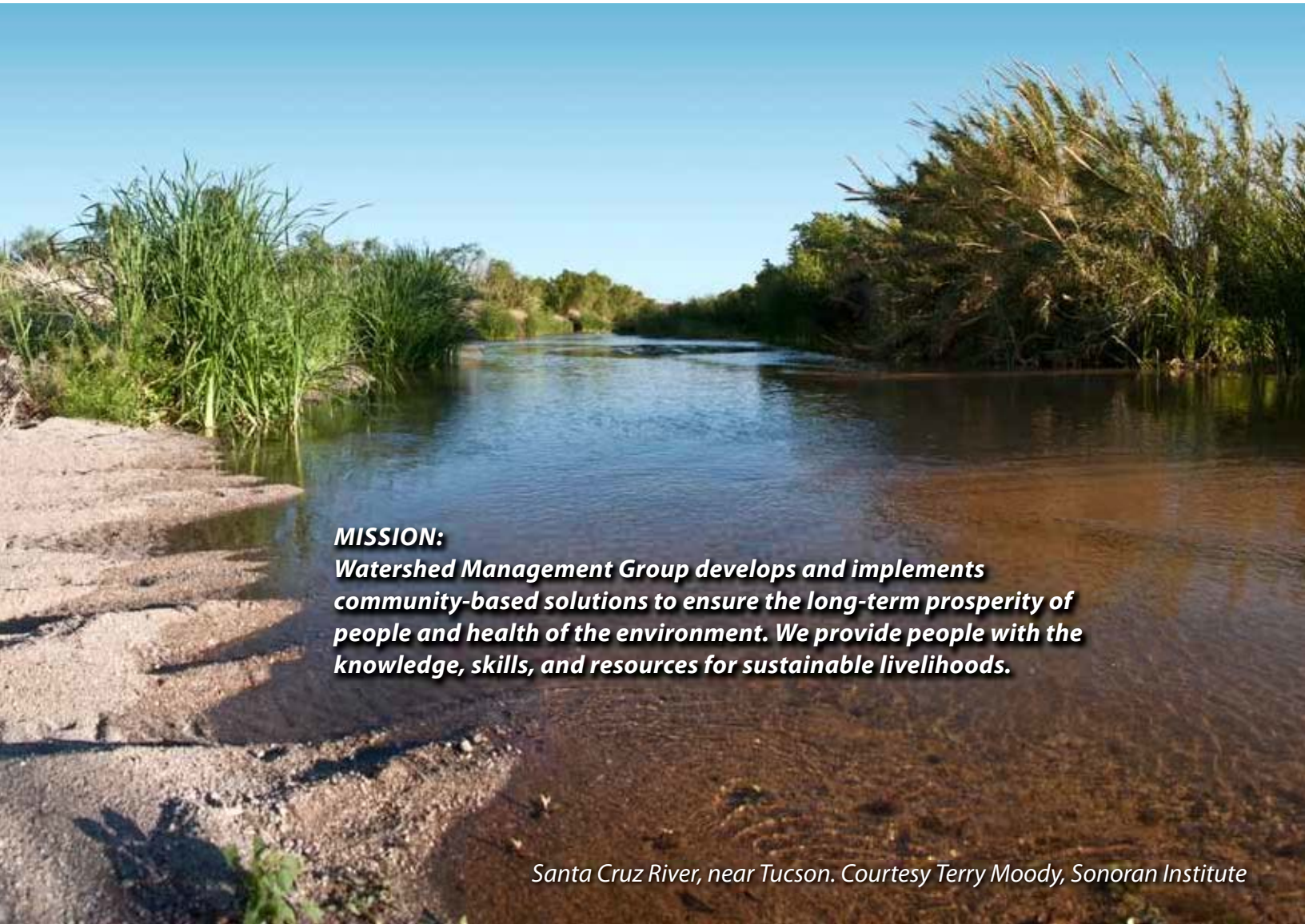


“By serving on the Stewardship Committee I can volunteer my time raising awareness and promoting a cause that is close to my heart: water sustainability in drylands. Lately I’ve been enjoying building relationships with other non-profits, community groups, businesses, and government agencies to forward synergistic goals.”

~ Jennifer Wadsworth



1137 N Dodge Blvd
Tucson, AZ 85716



MISSION:

Watershed Management Group develops and implements community-based solutions to ensure the long-term prosperity of people and health of the environment. We provide people with the knowledge, skills, and resources for sustainable livelihoods.

Santa Cruz River, near Tucson. Courtesy Terry Moody, Sonoran Institute