2023 IMPACT REPORT



It's Planting Time!



Impact Report Credits

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When it's Planting Season, Clear Your Calendar to Help Cool Our Cities

When the weather is fantastic in the springtime, all I want to do is be outside. When I look at the Catalina or Rincon Mountains, visible almost anywhere in Tucson, they are calling me to play, explore, and recharge. My bike commute has been pure joy, the birds are chirping, the wildflowers are popping, and the clouds seem fluffier than usual. Abundant winter rains have brought more clouds, humidity, and a carpet of green annuals, softening the desert.

What does this perfect, mild weather also mean? That it's a great time to plant trees and build native rain gardens. In the Sonoran desert, there are a couple opportune times to plant – March and April and mid-Sept through November, when the temperatures aren't too hot and there's minimal chance of frost or freezing. Some planting can also happen during the monsoon rains in July and August, though with more variable rainfall and hotter temperatures from climate change, planting at this time requires lots more attention.

When that ideal planting season arrives, have we blocked out time to play in the earth and plant? Or do we continue with our routines and miss this opportune window? Remember the Chinese proverb: "The best time to plant a tree was 20 years ago. The second best time is now." So don't let now pass you by!

Find a friend or neighbor, brother or cousin, and get out and plant together. And plan a way to capture rainwater and stormwater to nourish your new plants, right in the surrounding soil. If you can't dig and plant yourself, perhaps you can help by organizing others or providing funding.

Plant trees. Plant native trees. And also, plant everything else – shrubs, groundcovers, bunch grasses, wildflowers, vines! Trees are excellent for providing shade and soaking up carbon, but what we really want is to maximize native plants in the same way nature does, creating a cooling ecosystem, just like a forest.



So clear your calendar, pick a special day, and plant!

Lisa Shipek Executive Director



The Hydro-Local Experiment at WMG's Living Lab

Can we meet all our water needs and cool our cities with local, renewable water supplies? WMG's Living Lab is a rainwater-fed campus. Our goal: to

WMG's Living Lab is a rainwater-fed campus. Our goal: to use rainwater collected on site as our primary water supply, and live hydro-local. With this shift, we can minimize and potentially eliminate the use of municipal water, which is primarily imported water from the distant Colorado River and secondarily precious, local groundwater.

After eight years of monitoring our water usage, we've analyzed our data to see how this hydro-local experiment is working. And the answer is a resounding Yes!-rainwater has been our primary water supply.

Hydro-Local Living Lab Campus Snapshot: 2016 - 2023

- 10,000 gallons of rain tank storage capacity
- 4,000 square feet of roof area guttered and directed to the rain tank
- 86 gallons/day is our total average daily water use, including both indoor and outdoor water needs with a dozen staff and 3,000 annual visitors
- 4 to 15 inches annual rainfall
- 74% of annual water supply from rainwater, 26% from municipal

When we planned our water budget a decade ago, we figured with average rainfall, 11.3 inches a year in Tucson, we could live on rainwater all year long. And when we say live, we mean everything: washing hands, taking showers, cleaning dishes, doing laundry, watering veggie gardens and fruit trees, growing shade trees, and even drinking water. Everything BUT flushing toilets, which we promptly eliminated from the Living Lab in the first year and replaced with composting toilets.

But we haven't received average rainfall every year, and sometimes our tanks don't fill up. Our weather station on campus recorded four years with below average rainfall, two years near average, and two years above average. 2020 was the toughest year of all, with just 4.11 inches of rain, 36% of our average rainfall.

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Last year a 5,000 gallon steel tank was added to the Living Lab, capturing rainwater from the new Learning Center, and increasing our overall storage capacity to 15,000 gallons.

When our tanks go dry, we switch back over to municipal water for all our water needs. Fortunately, we still are able to conserve as much water as possible, due to low-flow fixtures, efficient irrigation systems, native plants supported with passive water harvesting, the reuse of greywater for watering fruit trees, and waterless composting toilets.

This hydro-local experiment replicates what others can do at home. We have several, modest size residential buildings, with just over 4,000 square feet of roof space, and 10,000 gallons of cistern capacity for water storage. These tanks are designed to fill up in our winter and monsoon rainy seasons.

Now we're entering a new phase of rainwater supply, with the addition of a 5,000 gallon tank that collects rainwater from our new Learning Center. With the variability of annual rainfall, extra storage allows us to save as much water as possible when there are above average rainy seasons and big rain events.

Interested in our data?

Here's what we've been collecting: weekly rainwater use and tank levels, monthly city water use, and daily rainfall on site. We read water gauges both on our rainwater use and city water use, and a meter for both indoor and outdoor water use.

Rainfall at the Living Lab by Year

Compared to Long Term Average 22



Visit us at the Living Lab to see our rainwater collection and filtration system, and how you can adapt these same practices to go hydro-local at home.

Watershedmg.org/LivingLab













Integrate water conservation practices into work culture









We Are One Watershed

Embedding Diversity, Equity, and Inclusion In Everything We Do at WMG



Since then our DEI initiatives have evolved, leading to both big and small shifts in how WMG does its work. Some bigger shifts include moving away from the fee-for-service Co-op program to our free (and bilingual) Build Your Own Basin program to make water harvesting accessible and affordable; and writing grants and developing partnerships to offer paid internship positions (instead of only unpaid ones), to ensure job pathways for limited income populations in the environmental sector. Some smaller changes look like ensuring baby changing stations, menstruation supplies, and gender inclusive signs are in the toilets at the Living Lab; and making sure DEI actions are embedded in all staff's job descriptions and performance evaluations.

Here are WMG's DEI resolutions and metrics, updated in 2023. By sharing our DEI resolutions and metrics on our website and impact report, we strive to be accountable to our community, and make sure our DEI efforts are not just lipservice but tangible actions and deep change work.









Resolution: We will expand efforts to serve culturally rich, limitedincome communities.

Actions:

- Build stronger connections with nearby limited- Create universally inclusive spaces at our Living Lab income communities to see the Living Lab as an asset & Learning Center through how we design our space and welcome people, including gender inclusive and their green space through Family Saturdays. facilities, family-friendly bathrooms, and ongoing Make rain garden resources accessible by eliminating Diversity Equity and Inclusion (DEI) culture building barriers to materials and training through our for staff and docents.
- free Build Your Own Basin workshops, offered in partnership with underserved neighborhoods.
- Offer paid internships to open job pathways for underserved populations through securing grant funds and growing partnership with UA and Pima Community College.
- Plan River Run Network events in locations that serve limited-income neighborhoods and partnering with community leaders whenever possible.

Resolution:

We will work towards collaborative conservation projects and policy making to restore our rivers and improve watershed health.

Actions:

- Co-lead Santa Cruz Watershed Collaborative to ensure diverse representation and inclusive culture, including governmental, Tribal, NGO, and industry partners, working towards the vision of "people working together to ensure a healthy urban watershed with flowing rivers and streams."
- Engage and learn from a diverse cross section of the community including Mexican, Indigenous, and Multi-generational communities with strong ties to the land, in conservation and advocacy efforts through the River Run Network, to value and steward flowing rivers and watershed health.
- Expand Release The Beavers campaign through binational collaboration, including annual beaver survey and watershed restoration projects with NGO and agency partners in Arizona and Mexico.









Resolution:

We will uplift all gender identities and fully value their contributions.

Actions:

- Include all gender identities by sharing pronouns in our communications and honoring various forms of gender expression in the workplace and at events.
- Uplift groups that have been historically disempowered in the workforce, like working moms, by providing the opportunity to build leadership skills, fill leadership roles, and provide flexibility for working parents.

Resolution:

We will embrace diversity within and without our organization.

Actions:

- Create a diverse staff by offering opportunities and job pathways for all individuals through how we recruit, engage, train, and onboard staff, interns, and volunteers.
- Design outreach and education activities specifically for Latinx communities in Southern Arizona through Spanish outreach materials, Spanish education activities, and activities in Latinx neighborhoods.
- Build on our Land & Water Acknowledgement through supporting Native-owned businesses, recruiting Indigenous staff and interns, and advocating for Indigenous leadership at watershed forums.





Volunteers help build a rain garden to reduce flooding and beautify a courtyard at the new non-profit facility for Youth On Their Own.



From Flooding to Flourishing Courtyard Makeover for Nonprofit Partner Youth On Their Own

In the heart of Tucson, nestled within the welcoming embrace of a new nonprofit facility, lies a courtyard transformed. This serene space, once a neglected area prone to flooding, now thrives thanks to a series of rain gardens constructed under WMG's guidance. Artwork adorns the white walls, native desert plants sprout from the mulch-covered basins at each corner, and simple wooden tables invite you to relax, reflect, and rejuvenate amidst the challenges of the outside world.

Youth On Their Own (YOTO), a beacon of hope in Tucson since 1983, extends a lifeline to minors who, for various reasons, find themselves without a traditional home. Instead of housing, YOTO provides essential support services, including educational encouragement, basic needs, and a sense of community. These services empower young people to continue their education and strive for a better future, despite their unstable living situations.

The challenge of transforming YOTO's new facility—a YOTO Director of Organizational Development repurposed art institute plagued by functional and aesthetic The efforts of WMG, alongside the generosity of Free Bird, Santa Rita Landscaping, and countless volunteers, have created a space that not only addresses practical needs but also inspires hope and fosters a sense of belonging in the Sonoran Desert among the youth served by YOTO. It's a reminder of the impact we can have when we come together, driven by compassion, to support our neighbors and build a more sustainable, inclusive future for all.

issues-was no small feat. The interior courtyard, particularly troubled by excessive flooding due to its unique architecture, needed a solution that was both practical and beautiful. Daniel Armenta, an environmentalist, horticulturist, and the Director of Organizational Development of YOTO, knew there was one group with values and talents ideal for solving such a puzzle. Enter Charlie Alcorn, WMG's Program Manager and Educator, ready to lend his expertise and labor to this meaningful cause.

On a day dedicated to service, in honor of the memory of September 11th, the community came together. This Day of Service was not just about remembering a pivotal moment in history but also about channeling collective energies towards creating positive change. Despite the intense summer heat, over a hundred volunteers converged on the site on September 10th. It was a day marked by hard work, community bonding, and the satisfaction of contributing to a cause greater than oneself.

The work went beyond the courtyard's confines, extending to the facility's front, where Free Bird and Santa Rita Landscaping generously contributed their services. Their landscaping and irrigation prowess complemented WMG's sustainable designs, creating an inviting facade that mirrored the interior courtyard's newfound vitality.

The courtyard itself now not only combats flooding with innovative rainwater harvesting but also offers a serene haven for YOTO's youth. It's a place where nature's resilience mirrors their own, surrounded by safety, support, and a community's goodwill.

"We've had some serious storms since that day, but zero flooding, thanks to Charlie's design and efforts. I love it out here... I eat lunch out here almost every day. "

-Daniel Armenta



Become a Certified Water Harvesting Practitioner

Register for an Upcoming Course in Tucson, AZ

- Sep. 9th Sep. 14th, 2024
- Nov. 4th Nov. 9th, 2024
- Mar. 10th Mar. 15th, 2025

In our Water Harvesting Design Certification course, you will receive the highest quality and greatest depth of training in integrative water harvesting offered in the nation. Through a unique combination of hands-on and classroom instruction, the course provides a thorough, on-the-ground understanding of the core principles and adaptive practices which can be applied in a range of climates and human contexts.

Learn alongside others at WMG's Living Lab and community-sites in Tucson and see and experience hydrolocal living, neighborhood green infrastructure, and homescale water harvesting.

Watershedmg.org/WHC

Hands-on green job training includes creating water budgets and learning critical elevations in building earthworks that capture rainwater and stormwater. WMG has certified 449 water harvesting practitioners since starting the training in 2009.





From invasive species removal to beaver habitat restoration, WMG's team has been out in the Santa Cruz and San Pedro River watersheds stewarding our rivers. The work in Tucson has largely been accomplished with help from River Run Network volunteers; the work in Mexico has been primarily in partnership with ranchers; and we've worked both on public and private lands. Our goal is to help restore our heritage of flowing desert rivers, through practices that infiltrate and recharge more water, expand floodplains and wetlands, and restore native riparian habitat.



WMG river restoration project Projects focused on restoring riparian forests and more river flow in shallow groundwater areas



Projects focused on slowing

flows, expanding wetlands

and riparian trees



Projects focused on improved river water quality through cattle exclusion areas, grazing rotation, and one rock dams to reduce sediment





Projects focused on capturing stormwater to grow native desert riparian habitat



DAM GOOD NEWS! Beavers Are Returning to Ciénega Creek

In the arid landscapes of the Sonoran Desert, WMG has embarked on an ambitious journey to reintroduce beavers, nature's skilled engineers, to their ancestral rivers. This initiative, part of a broader vision to restore southern Arizona's creeks and rivers, leverages the ecological prowess of beavers to rejuvenate the desert's waterways.

Beavers, once prevalent in the Santa Cruz and San Pedro watersheds, were completely extirpated by fur trappers in the 1800s. Their absence marked a significant loss for the region's riparian ecosystems. Recognizing the critical role beavers play in enhancing watershed health, WMG, alongside a coalition of local and international partners, has dedicated efforts to their return.

Since 2019, WMG has steadfastly led the charge for the reintroduction of beavers into Ciénega Creek, a vision that's now on the brink of realization. Through advocacy and rigorous groundwork, we've reached a pivotal milestone: all agency Environmental Assessments are complete, and the Bureau of Land Management and AZ Game and Fish are planning to reintroduce beavers by the end of 2025.

The journey to this point was marked by years of concentrated community efforts, led by WMG, to help agencies prioritize pushing through a long list of critical preparatory steps. Last year, this included organizing a comprehensive fence line survey conducted in partnership with the Bureau of Land Management (BLM) and Arizona Department of Environmental Quality. This survey was a vital step forward. The information gathered will be used to ensure that the creek's riparian zones remain free of grazing cattle which is monumental in decreasing erosion, maintaining water quality, and ensuring new cottonwoods and willow sprouts can grow into trees essential for beaver habitat.

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"How do we invest in our creeks and rivers? I like to think of [our restoration efforts] as "beaver-ing"... What do beavers do best? They work, tirelessly, and they enjoy their work. I like to think of a lot of our restoration projects – removing invasives, building structures, doing beaverrelated restoration – it's all beaver-ing."

Catlow Shipek, Sr. Program Director

3rd Binational Beaver Survey

Similar or Less Beavers than Last Year?

Spring 2024 brought with it WMG's third annual binational beaver survey. These surveys offer invaluable insights into the current state of potential habitats and beaver populations across the region. With the help of 70 volunteers, over 40 miles of the San Pedro in Arizona were carefully surveyed, and 30 more miles of creek habitat survey is planned for Mexico. This community science approach helps us better understand beaver population health – including geographic expansion, threats, & habitat suitability – and grow community support.

Preliminary results show the beaver population in the San Pedro National Riparian Conservation Area in Arizona is similar or smaller than last year. Stay tuned to see the full results, including our Mexico survey, this summer.

We could not have gotten where we are without the help of our innumerable River Run Network volunteers and partners and the countless hours of work they have put into making this dream a reality.

Stay up to date with our Release the Beavers campaign and help with future restoration efforts by joining the River Run Network at WatershedMG.org/RRN.



Volunteers carefull all tree ch

surveyed the San Pedro River for evidence of beavers, marking ws, beaver slides, tracks, dams, and lodges in our online survey.

Weekend Watershed Warriors The Battle and Victory Over Arundo

Over the last three years, River Run Network volunteers have cleared invasive Arundo donax from 55 acres of Tanque Verde Creek. Now riparian trees can repopulate the space thanks to natural succession and pole planting.

We're thrilled to celebrate the eradication of 55 acres of Arundo, a significant milestone achieved through our weekly Saturday workshops, led by WMG staff, interns, and fueled by hundreds of River Run Network volunteers. Last year we shifted to "chipping" the removed Arundo into mulch directly on-site — a strategy that turns a problematic invasive into a resource that helps retain soil moisture. It's testament to WMG's innovative approach to restoration. This mulch, strategically left on the upper banks of the creek, ensures that it supports the nascent recovery of native flora.

In 2023, WMG started riparian tree planting workshops in the areas cleared of Arundo. The goal is not just to remove Arundo but to restore native riparian plants, encouraging the return of native shrubs, grasses, and trees such as seep willow, goodings willow, and cottonwood, which are vital for a healthy riparian ecosystem. Volunteers help out with "pole planting," where cuttings of cottonwoods and willows are planted right into the creek bed. The tree poles are stripped of leaves and buried in the creek, in areas where groundwater is near the surface and the tree poles can resprout into new trees.

We're seeing natural plant succession in areas where Arundo has been permanently removed-where native trees like cottonwoods, have the room and opportunity to repopulate. "The creek heals itself. Once we remove the invasive species, some of the plants come back on their own. We're just helping that process along." Lauren Monheim, River Run Network Program Manager.

As WMG moves forward, both the Arundo removal and riparian tree planting workshops serve as critical components of our broader "Cool Tucson 5 Degrees" initiative, aimed at mitigating urban heat and restoring natural habitats, such as riparian forests.

We invite the community to join WMG's River Run Network in this vital work. Whether participating in the Arundo removal or the equally important riparian tree planting efforts, your involvement contributes to a larger vision of ecological restoration and urban cooling.

Consistent efforts by WMG's River Run Network volunteers are helping restore groundwater levels and expand riparian forests along the Tanque Verde Creek. Since its inception in 2021, WMG's Arundo removal initiative has made significant strides towards reclaiming the Tanque Verde Creek from the clutches of the invasive Arundo donax. This plant, known for its towering stalks and rapid growth, had taken over large expanses of the creek, especially in areas of shallow groundwater, sucking up precious groundwater and crowding out native trees.

The plant is physically challenging to remove and can be mentally daunting for volunteers, but our River Run Network volunteers are up for the challenge! The persistence of Arundo, capable of sprouting anew from remnants of roots not fully eradicated, underscores the necessity of perseverance in these creek restoration efforts.

Join future restoration workshops along the Tanque Verde and throughout the Santa Cruz and San Pedro watersheds by joining our River Run Network at Watershedmg.org/RRN

2023 Funders, Sponsors, and Partners

Grant and Foundation Funding Tucson Region Partners

Arizona Department of Environmental Quality Arizona Department of Forestry & Fire Management Arizona Lottery Arizona Water Protection Fund Desert Diamond Casinos and Entertainment Freeport-McMoRan, Inc. Jeff and Connie Woodman Foundation Lester and Millie Rosen Foundation National Fish and Wildlife Federation Nature Conservancy Neutopia Trust North American Development Bank Pima County Community & Workforce Development **River Styx Foundation** The Stonewall Foundation US Fish and Wildlife Service US Forest Service Ward 6 Council Office

Business Sponsors

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Amphitheater High School Arizona Deptartment of Environmental Quality Arizona Game and Fish Department, Tucson Aquatic Wildlife Program Arizona Master Naturalist Association Arizona Project Wet Arizona-Sonora Desert Museum **BKW Farms Borderlands Restoration** Canyon del Oro High School Ciénega Watershed Partnership City High School City of South Tucson City of Tucson Department of Transportation and Mobility City of Tucson Parks and Recreation City of Tucson, Ward 1 Council Office City of Tucson, Ward 3 Council Office City of Tucson, Ward 6 Council Office Community Gardens of Tucson Cooper Center for Environmental Learning Devereux Advanced Behavioral Health Drachman Montessori School Flowing Wells Neighborhood Association **49ers Country Club** FortyNiners HOA Freeport-McMoRan Sierrita Operations Girl Scouts of Southern Arizona YWCA House of Neighborly Service Las Milpitas Community Farm Living Streets Alliance Local First Arizona **Mission Gardens** National Park Service - Saguaro National Park National Phenology Network New Hope Church Palo Verde Neighborhood Association Pima Association of Governments **Pima County Community Development** Pima County Cooperative Extension, University of Arizona Pima County Office of Sustainability & Conservation Pima County Regional Flood Control District Pima County Regional Wastewater **Reclamation Department** San Xavier District of the Tohono O'odham Nation Satori Charter School Sky Island Alliance Sonoran Environmental Research Institute (SERI) Sonoran Institute

Steele Elementary School Sustainable Tucson The Drawing Studio The Garden Kitchen The Sierra Club - Grand Canyon Chapter Tohono Chul Tucson Audobon Society Tucson High Magnet School Tucson Village Farm **Tucson Water Department** U.S. Forest Service, Coronado National Forest Catalina District United States Bureau of Reclamation University of Arizona Bureau of Applied Research in Anthropology University of Arizona College of Architecture, Planning, and Landscape Architecture University of Arizona Udall Center for Studies in **Public Policy** University of Arizona Water Resources **Research Center** University of Arizona, School of Natural Resources & the Environment **Phoenix Region Partners** Arizona State University City of Glendale City of Phoenix Water Services Department City of Surprise City of Tempe **Eighty Eight Acres** EPCOR Fountain Hills Community Garden Four Peaks Brewery The Nature Conservancy - Phoenix Trees Matter

Mexico Partners

Arguitectura Universidad de Sonora Caminantes del Desierto A.C. CBTIS-106 Cananea Cuenca los Ojos EJIDOS - San Pedro Watershed Hispanic Access Foundation Naturalia A.C. **POMONA Residencial** PROFAUNA Rancho El Aribabi, Sonora

2023 Financial Report Re

513,322
193,788
247,360

\$954,470 Total Income

Expenses

Program Services

Total Expenses

Community Conservation (including educa	itional
+ green job training & consulting)	255,117
Living Lab & Learning Center: Programmati (including intern & docent program, Fam tours, and educational workshops)	c expense ily Saturdays, 184,630
River Run Network (including education, re watershed planning & policy)	storation, 245,047
Watershed Education Outreach	92,375
Total Program Services	\$777,168
Supporting services	
Administrative	119,404
Development	65,030
Total Supporting Services	\$184,434

\$961,602

In 2023, WMG built the Learning Center, a multipurpose educational space at the Living Lab. This capital project was made possible thanks to \$535,000 in capital donations, and thanks to a great project team, the Learning Center stayed on budget. The capital donations and expenses are not included in the financial report above.







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Give Monthly to Restore the Flow and Help Cool Our Cities

\$15/month: provide free rain garden workshops for families

\$25/month: fund sustainable desert living education at the Living Lab

\$50/month: support hydro-local policy and planning work

\$100/month: advance our River Run Network to restore desert rivers

Watershedmg.org/Flow

