



WMG Updates

By **Lisa Shipek**, Executive Director WMG

At the core of WMG’s mission is the goal to improve people’s lives. We are pleased to be partnering with many different organizations to achieve this goal, particularly by working with disadvantaged communities who cannot typically afford environmental improvement projects. We just recently completed a greywater installation at Casa Paloma which provides transitional housing for homeless women in Tucson. Primavera Foundation, who runs the housing program, was enthusiastic to transform the landscape of Casa Paloma, while providing an educational format for volunteers. WMG organized a two day work-



shop with community volunteers, high school students, and residents from Casa Paloma to install a greywater system on a communal laundry machine. Up to eight loads of laundry are done each day, and now this wealth of greywater is being used to grow a variety of fresh produce

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Adult Environmental Education for a Shifting Economy

By **Catlow Shipek**, WMG Board Chair

We are at a crossroads in our economy. The current economic slump and global environmental problems have created an opportunity to develop green professionals and increase the role of green industries. We have a chance to redefine our priorities, create and foster sustainable jobs and industries, and learn new skills as we remake our economy.

Environmental education for adults provides the knowledge and technical skills needed for newly emerging markets. The future is in sustainable “green” jobs which offer environmental benefits, fi-

nancial savings, and improved quality of life standards. Environmental education enables individuals to pursue their passions, learn new skills, build community connections, and reconnect with the environment. It can empower business, political, and community leaders to push for change and improve resource management.

WMG has been a leader in providing adult environmental education through training in water harvesting and conservation techniques. We have already seen the personal and career benefits indi-

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Special Requests:

- **Volunteers to assist with upcoming fundraising events**
- **Seeking LCD Projector for giving presentations**

Please contact Lisa Shipek: lisa@watershedmg.org or 396-3266

Green High School: Sky Islands Moves the Classroom Outside

By **Dr. Shari Popen**, Sky Islands High School Director

If a school adopted Permaculture Design to structure its curriculum, what would that look like? A lot like Sky Islands—the new ‘green’ public high school in Tucson. Sky Islands adopts a school-to-earth program across the curriculum. Students and teachers see the school as part of an ecosystem that includes the urban neighborhoods and the desert habitat. Studies focus on the dynamic balance and the conditions that help to sustain it. For example, courses link global foods and health literacy, gardens and oral histories, or ecology and art.

Young people suffer from what Richard Louv calls ‘nature deficit disorder’. Louv’s best-selling book *Last*

Child in the Woods:

Saving Our Children from Nature Deficit Disorder (2005) has been

translated into six languages and was recently reissued in a revised edition. Louv draws attention to the many factors that conspire to keep children indoors and their increasingly unmet need for play in nature. Hands-on experience in the natural world, Louv says, is essential to cognitive, social, and emotional development.

In November, students and teachers from Sky Islands participated in WMG’s greywater harvesting project



Catlow Shipek instructing students and teacher from Sky Island how to install a greywater system at Casa Paloma - housing for homeless women.



with the Primavera Foundation. The Primavera Foundation promotes economic and social justice while working to build a future in which all people are assured basic human rights, a livable income, and safe, affordable housing. The students volunteered to work in the Barrio Anita neighborhood in Tucson’s central district—helping to plant fruit trees, install a greywater system, landscape and paint. In helping to create smart water systems, the students from Sky Islands became smarter themselves about transforming a community and creating healthy ecosystems.

...students are transformed from carriers of gloomy environmental predictions into optimistic hands-on workers.

By participating in WMG’s water management projects, students are transformed from

carriers of gloomy environmental predictions into optimistic hands-on workers. We are convinced that changing our ecological awareness requires an experiential education.

Through hands-on workshops with community partners, students have the opportunity to learn about themselves and those they work with. Students discover their ability to do physical work and contribute to an attainable goal. One student participating in the greywater workshop realized that he was conducting an interview for his oral history class without even being aware of it. As a class assignment, interviewing had been seen as a daunting task. But when it turned into a conversation between two people—a high school student and a woman who had been homeless—getting drinks of water together turned the interview into an authentic writing experience.

Learning to be stewards of our environment contains equal parts knowledge, skills, and acquiring the habits and personal will to dig in. By participating in water conservation projects, our students actively participate in environmental problem-solving and community-building. They learn to value the world they inherit.

Our Sincere Thanks

A Special Thanks To:

- Kim and Jim Afinowich for donating a laptop computer.
- Chipotle for donating burritos to the Toltecalli Academy open house.
- Thanks to the following nurseries who donated plants for the community demonstration site at Toltecalli Academy: Desert Survivors, Civano, Tohono Chul, Nighthawks Nursery, and Harlow Gardens.

Individual Donations:

River Basin Level

Randolph Accetta
Donna Lines

Flowing River Level:

Albert Buono
Nicole Buono
Tamarha & Keith Evert
Robert and Jo Anne Hungate
Henry and Ruth Jacobson
Merry Lewis
Peate Family Partnership
Francine Shacter
Ed Thompson

Silver Raindrop Level:

Jared and Sowmya Buono
Gina & John Chorover
Jill Onken & John Douglas
Martha Retallick

Dewdrop Level:

Pierre Bondoumbou
Evan Canfield
Patricia DeWitt
Ethelyn Fennel
Carmen Garcia-Downing
Diana Rhoades
Erielle Sita
Adam & Stephanie Springer

Sustainable Living Tip

Tip # 7: Green your Holidays by shopping locally for gifts

There are many types of gifts that can reduce the consumerism and environmental impact of the holidays. Some examples are giving donations to good causes, giving homemade gifts, and giving the gift of your time instead of a material item. If you'd like to buy someone a gift, purchase a gift from a local business, especially those that produce goods that have been made

from locally available materials. Not only will you be supporting local businesses in a tough economy, you will also be reducing the amount of resources needed to produce and transport your gift. Find out what your home town or city specializes in, and give these 'local' treats as gifts. For example,



are there local artisans that create jewelry, pottery, or unique clothing? Are there local businesses that produce candies, jams, or wines made from local ingredients? Farmers markets may be a great place to start for finding these local gems. Happy Holiday Shopping!

Water Harvesting Ordinances Approved

The City of Tucson became the first city in the nation to pass a commercial rainwater harvesting ordinance. The ordinance, passed in October, mandates all new commercial developments to meet half of their landscape water demand with rainwater harvesting. New commercial developments will have to submit water harvesting plans to the City of Tucson for final approval. The 50% requirement was determined as an attainable rainwater harvest-

ing goal that can be achieved through passive water harvesting features and would not require the installation of water storage tanks.

A second ordinance was passed that mandates all new residential construction to have greywater stubouts. This means all laundry machines, bathroom sinks, and showers will have additional plumbing to route greywater to outdoor landscapes. By having the stubouts in

place, homeowners can easily install the outdoor plumbing necessary to install complete greywater systems.

Both ordinances will come into effect in 2010.

Follow the link below for more information on the city ordinances:

<http://www.tucsonaz.gov/water/ordinances.htm>

WMG Updates (continued)

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including three citrus trees, grapes, and artichokes, along with other native plants.

Apprenticeship Program

We have just wrapped up five months of training for our first apprenticeship program. The ten apprentices were trained by Tucson's experts in water harvesting design and implementation. The apprentices are moving into the second phase of their training, where their new skills will be tested by leading 4 workshops through WMG's Water Harvesting Co-op program. They will be leading bilingual workshops in southern Tucson with low-income families to install water harvesting systems.

Open House High School Community Demonstration

High school seniors at Toltecalli Academy in southern Tucson shared their campus sustainability project with community members on December 13th. WMG has been working closely with Toltecalli over the fall semester to transform their outdoor grass landscape into a model of sustainability for the surrounding neighborhoods. Students spent many weekends and school days designing and implementing improvements including basins, raised pathways, a large cistern, a vegetable and fruit garden, and native plantings.

The open house's purpose was to showcase the water harvesting improvements on campus, raise environmental awareness, and inform families of the Water Harvesting Co-op program. Through a grant from the Arizona Community Foundation, WMG is offering \$10,000 in subsidies for low-income families. Ten families will



High school students at Toltecalli Academy share their campus sustainability projects with the community.

receive up to \$1,000 each to cover the cost of workshop leaders and materials. Each of the workshops will be conducted in a Co-op format, with 4 to 8 participants from other households. In addition, there will be two trained apprentices to co-lead the workshop and polish their new water harvesting skills.

City Council Offices Go Green

This fall WMG has been busy working with community partners to create more water harvesting demonstration sites. We have been working with Ward 6 Council Office and Ward I Council Office in Tucson to retrofit their landscape with water harvesting features. Through these partnerships, we are able to continue to offer free workshops to the public.

Fundraiser Postponed

The fundraising event that WMG planned for November at Esperanza en Escalante, was postponed until March 28, 2009. Please stay posted for more information on this event



Young volunteer hard at work at Ward I.
Photo taken by Emily Brott, Sonoran Institute

WMG Seeks New Members for Board of Directors

Interested in giving back to your community, developing new programs, advising on international projects, or providing organizational and financial oversight?

Watershed Management Group will be offering two open-houses in early 2009 to share with you more about our organization and all the information you need to apply to become a board member. You can help define the direction of WMG and provide essential community support.

More information will be provided in early January regarding the open-house presentations. We look forward to seeing you there!

Environmental Education (continued)...

(Continued from page 1)

viduals have received from our workshops and trainings. These have included skill development that has led to jobs, leadership for neighborhood projects, and increased involvement in “green” policy development.

Environmental education opportunities abound in various sectors (e.g. solar energy to ecosystem restoration) and at multiple scales (local to national programs). Below is a brief listing of some of the many opportunities:

National:

- Center for Watershed Protection (CWP); www.cwp.org; Technical training opportunities on specific watershed management topics
- Natural Building; www.naturalhomes.org; variety of workshops and courses available
- Solar Energy; www.solarenergy.org; technical workshops on renewable energy systems
- National Permaculture opportunities: www.permaculture.net
- Audubon; www.audubon.org; links to local chapters and activities with a wildlife focus
- American Rainwater Catchment Systems Association (ARCSA); www.arcsa.org; promotes rainwater catchment through educational opportunities

Arizona:

- Alternative building workshops:
 - Rammed earth; www.rammedearthhomes.com; offers construction workshops
 - Strawbale; www.caneloproject.com; offers construction workshops



New Apprenticeship Program Summer 2009

WMG was recently awarded a grant from the Center for Watershed Protection to further develop our water harvesting apprenticeship program. A regular and advanced water harvesting training program will be offered for those interested in being certified to be water harvesting instructors or practitioners. The programs will be condensed into a 12 day and 8 day training session to allow for non-Tucsonans to participate. Please stay tuned for more details on the program in the spring.

- Arizona Master Watershed Stewards; www.ag.arizona.edu/watershedsteward; educates and trains volunteers in restoration, monitoring, and conservation of watersheds
- NEMO; Non-point Education for Municipal Officials; www.snr.arizona.edu/nemo/index.php; educational opportunities for land-use decision makers
- WMG Water Harvesting Apprenticeship; www.watershedmg.org; Water harvesting intensive technical training for community leaders

Tucson, AZ:

- Pima Community College; www.pima.edu; offers a variety of technical and non-technical classes
- Sky Islands Alliance; www.skyislandalliance.org; Natural lands conservation activities
- Sonoran Permaculture Guild; www.sonoranpermaculture.org; Integrated design workshops and activities

Winter Fundraiser

It is not too late to donate to Watershed Management Group for our winter fundraising drive! We are aiming to raise \$10,000 to support WMG's programs. Every contribution will help us reach our goal. Funds will be used to support the following: School Yard Water Education program, the Water Harvesting Co-op program, and water harvesting installations for disadvantaged communities.

Please consider making a donation as a gift for the holiday season. If you donate in the name of a friend, family member, or colleague, WMG will send a card in your honor acknowledging the gift donation.

Neighborhood Training in Water Quality: Program Update

By James MacAdam, WMG Watershed Outreach Coordinator

In September, WMG began a two-year program to improve water quality and provide education in central Tucson's Rincon Heights neighborhood. We kicked off the project with a cleanup of High School Wash, a usually dry stream that flows west through the heart of the urban area. Volunteers from the neighborhood, WMG, and the University of Arizona's Peace Corps Fellows program picked up trash and assessed the health of the wash. What we found was typical of many urban washes: a collecting place for trash and pollutants both washed from nearby properties and dumped directly into it. High School Wash has been forced into a narrow channel by encroaching residential development and its steep eroding banks are largely held in place by invasive plants like African sumac and bermuda grass. High School Wash has a long way to go to reclaim its natural beauty.

Our project intends to help the wash reclaim its beauty and ecological purpose. Our first goal is to educate local residents about water quality issues affecting their local streets and streams. In October, some 40 people attended a WMG-hosted presentation where a variety of speakers shared information about Tucson's water quality, the impacts of stormwater pollution (including on our groundwater supplies), and the best practices for improving water quality in our neighborhoods.

November saw some 25 of us installing those best management practices at a workshop in Rincon Heights. Here lies our second goal: combine teaching and on-the-ground change in a series of neighborhood rainwater harvesting workshops. We installed



Volunteer plants native shrub in newly created rainwater basin.



James MacAdam teaches neighborhood volunteers about non-point source pollutants and how they affect water quality.

bioretention basins, berms, swales and curb cuts at a site in Rincon Heights designed not only to prevent stormwater from running onto the street (and thus eventually into the wash), but to actually harvest stormwater from the street into native-vegetated landscape features that retain and filter that water. Over the next six months, WMG will be hosting similar workshops at new sites in Rincon Heights every month. We invite you to join us to learn first-hand these simple, yet highly effective water management techniques!

During the High School Wash cleanup, more than one long-time resident of the neighborhood commented that this was the first time they had set foot in the wash. As people gain awareness, they may notice that even in this long-established urban neighborhood, shady stands of native velvet mesquite still exist in places along the wash. With our continuing effort, we hope these seeds of awareness will sprout among the neighborhood, growing a new way that people see and care for their local washes and water resources.

Our next public workshops on neighborhood water harvesting for water quality is January 10th. For more information, visit our web site or contact James MacAdam, james@watershedmg.org, 520-396-3266.



A series of basins along the right-of-way

Support Watershed Management Group Today!

Watershed Management Group is a 501(c)3 not-for profit organization based in Tucson, Arizona. All donations are tax deductible.

Suggested Individual Contribution Levels:

- ◇ Dewdrop: \$15
- ◇ Silver Raindrop: \$50
- ◇ Flowing River: \$100
- ◇ River Basin: \$500
- ◇ International Watershed: \$1,000

Suggested Business Contribution Levels:

- ◇ Rillito River: \$500
- ◇ Santa Cruz River: \$1,000
- ◇ Gila River: \$5,000
- ◇ Colorado River: \$10,000

WMG Wish List

- ◇ LCD Projector
- ◇ Ladder
- ◇ Garden tools (shovels, pick axes, hand trowels, etc.)
- ◇ Wheelbarrow
- ◇ Locking file cabinet
- ◇ Hauling trailer

You may also make your tax deductible donation online at www.watershedmg.org on our Contributions page.



Ward 1 neighbors place Tucson basin native plants in newly created basins at City of Tucson Ward 1 Council Office. Photo taken by Emily Brott, Sonoran Institute



WMG volunteers plant Tucson basin native plants in newly created basins in the public right-of-way.

Watershed Moment is a quarterly newsletter written by WMG staff and guest contributors, with final editing by Lisa Shipek. If you are interested in submitting a story to the Watershed Moment, please contact Lisa at lisa@watershedmg.org or at 520-396-3266.

The mission of Watershed Management Group is to improve rural and urban livelihoods by integrating community development and conservation. We provide local residents and community groups with the knowledge and skills necessary to sustainably manage their natural resources.