

SPRING 2014

# A WATERSHED MOMENT

A Newsletter of Watershed Management Group



watershedmg.org



Catlow Shipek teaches how to improve our backyard soils.

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Check out all WMG's videos on our YouTube channel at [youtube.com/watershedmg](https://youtube.com/watershedmg)

## Waste Not!

Transform your waste into soil, water, and energy.

WMG's newest video *Waste Not!*—featuring Brad Lancaster and narrated by Lisa Shipek—will help you rethink waste. The video explores a broad spectrum of commonly wasted resources that can be easily utilized to build soil and healthy urban households. The 22-minute documentary is available for your viewing pleasure on WMG's Youtube channel.

So grab your popcorn and compostable snacks. But you won't be sitting for too long—Brad Lancaster's creative solutions will have you leaping off your couch to take action!

Please help us by sharing *Waste Not!* widely. The video is a great educational resource for high school and university classrooms, conferences, film festivals, and community workshops. Thanks to the U.S. Environmental Protection Agency for providing grant funding to support this video and our other Soil Steward program activities.

Find a link to the video here: [watershedmg.org/soil-stewards](https://watershedmg.org/soil-stewards)



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# Creating Abundance with our Trash

In the United States, organic materials—yard trimmings, food scraps, wood waste, paper and paperboard products—make up about two-thirds of our trash.<sup>1</sup> Transporting, and burying or burning, all this organic material is expensive and polluting. At the

same time, our soils are degraded, and we spend time and money pumping them full of commercially-produced fertilizers with no long-term benefit.

Together, we can turn this problem into a solution! Thanks to funding from the U.S. Environmental Protection Agency (EPA), WMG piloted a two-year program on Soil Stewardship. This program was a smashing success, and we are pleased to share with you some of the resources we've developed through our Spring newsletter. We hope you feel empowered to take action now to reduce trash and enhance our soils for a more resilient future.

Sincerely,

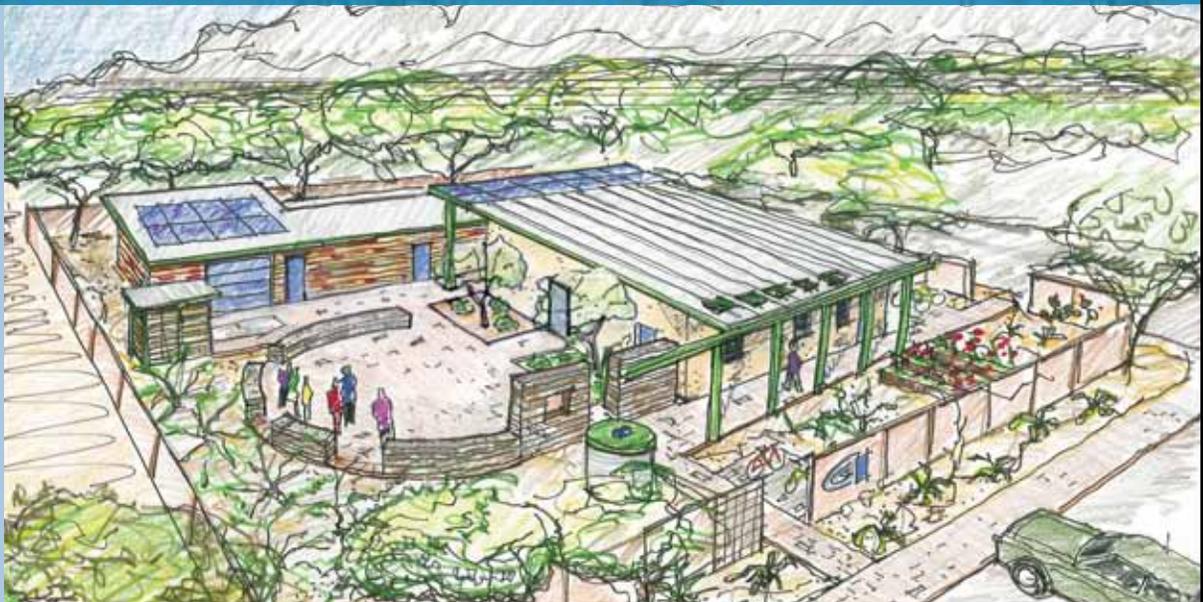
Lisa Shipek  
Executive Director

<sup>1</sup>US Composting Council, USCC Position Statement: Keeping Organics Out of Landfills

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*Share your values with a donation to our Living Lab and Learning Center*

Learn more at [watershedmg.org/living-lab](http://watershedmg.org/living-lab) or contact Lisa Shipek at 520-396-3266



# YOUR GUIDE TO HEALTHY DESERT SOILS FOR PRODUCTIVE LANDSCAPES

*Follow these four steps and you can  
build healthy soil!*

**(1) Plant the Water:**  
Increase soil  
moisture &  
spark life

**(2) Protect Soil:**  
Minimize erosion  
& eliminate  
chemicals

**(4) Plant Your  
Ecosystem:**  
Promote roots,  
ground covers  
& nitrogen fixers

**(3) Mix in  
Organics:**  
Put organics  
in your yard,  
not the landfill

Building healthy soil benefits you and your community. Healthy soil is the foundation of a beautiful and productive yard. You'll have healthier trees, a vibrant vegetable garden, and more food and habitat for your favorite wildlife. In addition, you can reduce the trash that ends up in the landfill, reduce pollution to our water bodies, and mitigate flooding problems.

The specifics of this guide are geared for desert soils in arid and semi-arid environments like those found throughout the western U.S. However, the principles are relevant to soil building in all environments, wet or dry.

# SOIL BASICS: Water + Carbon (Organic Materials) => Soil Life!

**Soil is alive!** It is made up of inorganic materials (sand, silt, and clay), organic materials, air, water, and critters (micro and macro organisms).

**Before:** Soil is compacted, with little dead or living organic material.

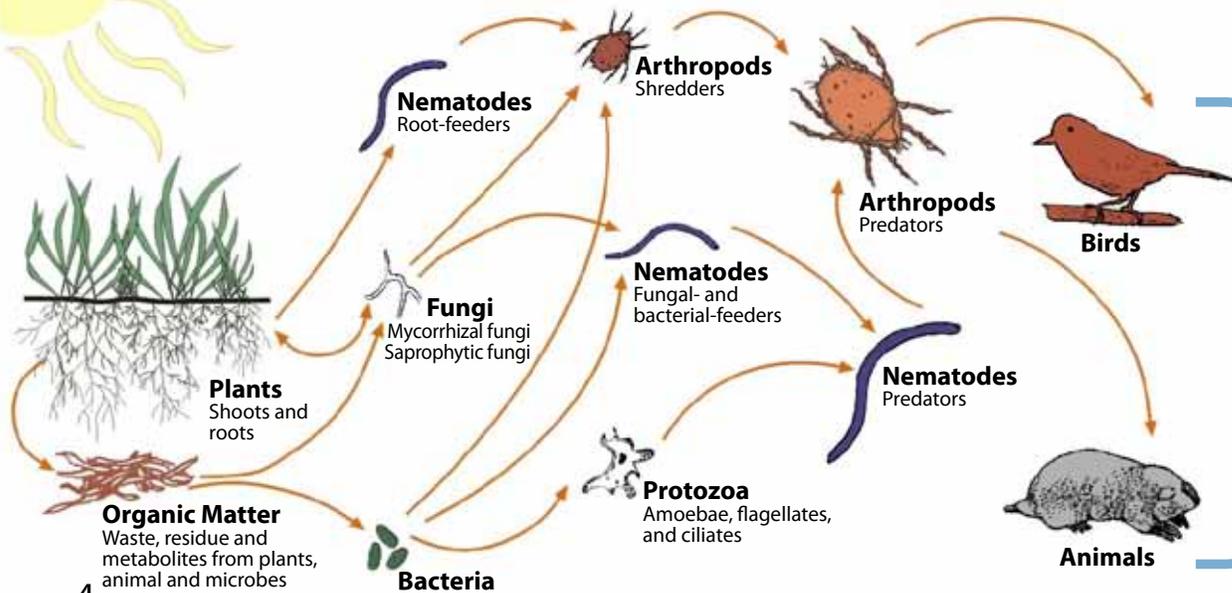


**After:** Soil is being de-compacted through increased decomposing organic material and soil life activity.



## Soil Food Web

Source: USDA Natural Resources Conservation Service



Healthy soil has a complex ecosystem full of life. Did you know all these types of critters are essential for soil health?



# PLANT THE WATER!

**40-60% of residential water use is for outdoor uses, like irrigating our yards.** Instead, make use of freely available waters and reduce your water footprint.

- **Direct rainwater** from your rooftop, patio, and pathways to your rain basins, allowing the soil to soak it up like a sponge. Rainwater flushes soils of accumulated salts and is free of chlorine.
- **Harvest stormwater** from the street through a curb inlet. Research shows tree growth is increased 30% by utilizing stormwater captured in organic mulch basins (Dr. Pavao-Zuckerman).
- **Divert greywater** from your laundry, shower/bath, and sinks to have a more consistent source of water for your plants.



Downspout directs rainwater to a rain basin to irrigate native plants.



Below. Gravity-based branched drain distributes shower/sink water to basins.



Above. A laundry greywater system uses pressure produced from the machine to push water out to fruit trees.



This street-side curb inlet allows stormwater to soak into the soil and irrigate native plants within a basin.



# PROTECT SOIL!

- Minimize practices which disturb or compact the soil. Continued disturbances inhibit soil-forming processes.
- Protect the soil surface from wind and water erosion by applying surface mulch.
- Eliminate the use of chemical fertilizers, pesticides, and herbicides. The use of these chemicals creates harmful dependencies that destroy instead of build the soil food web cycling of nutrients. Additionally the majority of these products are harmful to people, wildlife, and pets.

## GOOD PRACTICES



**Prune & Mulch**



**Stabilize slopes**



**Apply organic ground covers**

## BAD PRACTICES



**Leaf Blowing**



**Spraying**



**Raking**



# MIX IN ORGANICS!



- Feed the soil from the surface with compost and mulch. Apply a surface organic mulch to protect the soil surface and reduce evaporation of soil moisture.
- When you prune your plants, chop and drop the material into your mulched basins.

Fresh tree trimmings applied to a rain basin.

After a good soaking rain the fungal organisms send up fruiting bodies - MUSHROOMS! - a good sign that decomposition is occurring!



**SEE HOW  
MULCH TURNS  
INTO SOIL!**



With the right moisture conditions present in a rain basin the tree trimmings quickly start to create a thin organic layer at the soil surface which helps re-build healthy soil.

See the white substance? It's fungal hyphae beginning to decompose the mulch and transport nutrients into the soil.



# MIX IN ORGANICS!

**Yard trimmings make up 13.5% of U.S. municipal solid wastes (US EPA).** These are critical soil-building resources being wasted and filling landfills. Landfills are the largest source of methane production which contributes to greenhouse gas emissions.



## MULCH YOUR DRIVEWAY!

Old, crumbling asphalt was removed from a driveway and replaced with organic mulch. Now the driveway allows rain to soak in and water the front yard trees rather than drain to the street.



## MULCH OUR STREET-SIDE LANDSCAPES!

Organic mulch is a critical resource for restoring soil and filtering polluted runoff along street-side rain basins. Research shows that these soils attain a soil food web complexity equivalent to a mature forest soil in only 2 short years. (Dr. Pavao-Zuckerman)



## MULCH YOUR YARD!

Leaves from a fruit tree decorate the soil surface and protect the tree's roots during times of extreme cold or heat.

# When do you use straw vs. woody mulch?



Straw or alfalfa mulch is easily broken down by bacterial organisms. Most vegetables and annuals prefer bacterially dominated soils because the bacteria produce nitrogen in the nitrate form making it accessible to these plants.



Woody mulch (e.g. tree trimmings) laid on soil surface promotes fungi. Fungi are better adapted to breaking down tougher woody materials. Most trees, shrubs, and perennials prefer fungal dominated soils. The fungi promote nitrogen in the ammonium form making it accessible to these plants.

## Here are some simple indicators of your soil health

CATEGORY	INDICATOR	IMPACT	MEANING
<b>LIVING ORGANISMS</b>	No soil micro-organisms	<b>Bad</b>	Sterile/lacking organic material
	Earthworms	<b>Good</b>	Soil tillers & micro nutrient processing at work
	Sow beetles & other macro arthropods	<b>Good</b>	Carbon shredders at work
	Fungal hyphae (Mushrooms)	<b>Good</b>	Stable soil with woody organic material being broken down & nutrients being redistributed for food web cycling
<b>WATER</b>	Surface ponding	<b>Bad</b>	Poor drainage and/or soil surface has sealed with fine particles and/or compacted soil
	Oils/greases/stormwater	<b>Bad</b>	Need soil & plant filters to treat
	Rotten smell	<b>Bad</b>	Anaerobic (without oxygen) conditions
	Soil greying	<b>Bad</b>	Anaerobic conditions - iron reduction
	Quick draining	<b>OK</b>	Sandy/gravelly soil - coarse materials with high porosity; depends on role of soil if this is desired or not
	Earthy smell	<b>Good</b>	Aerobic (with oxygen); actinomycetes (bacteria) present
<b>SOIL CONDITION</b>	Salt/mineral crust buildup	<b>Bad</b>	Irrigating with hard water
	Powdery soil	<b>Bad</b>	Soil structure lost - easily eroded
	Compacted	<b>Bad</b>	Less porosity hinders movement of air, water, and plant roots.
	Large aggregates of soil	<b>Good</b>	Soil has structure allowing for movement of air, water, roots, and critters.



# MIX IN ORGANICS!

# Complete the

## Animal Poop....

Earthworms and their castings are a highly prized garden resource. Earthworms are hard to maintain in desert soil, but by adding a regular greywater source and mulch soil stays more consistently moist promoting earthworms.



This compost pile is built right into the chicken coop. Food scraps are added during the day so chickens can eat what they want and scratch and turn the pile. They roost on a bar over the pile at night and add their nitrogen rich manure. This makes a great compost for vegetable gardens!



**Food wastes make up 14.5% of U.S. municipal solid wastes (US EPA) with only 2% recovered** prior to ending up in the landfill. What a waste that could be helping to grow more tasty food!

# Nutrient Cycle — Integrate Humanure!

## Your Poop....

**You generate 13 gallons of poop each year** which, if composted, could help fertilize 13% of the grain production needed to sustain you each year.<sup>1</sup>

A composting toilet works similarly to a kitchen composting system. The nitrogen and moisture in your poop is balanced with a carbon-based cover material that is added after each use. This cover material can be wood shavings, shredded paper, leaf litter, etc. The cover material added after each use also prevents odors and visually covers the deposited poop.

After a chamber (or batch) of the composting toilet system is filled, the chamber is left to compost for at least 4 months in warmer climates or longer in cooler climates. The composting process safely and effectively renders pathogens harmless for use in the backyard garden. Applied as a composted material to fruit trees it completes your nutrient cycle.

## Your Urine....

**You generate 2 liters of urine each day**, which if utilized, could help fertilize 70% of the grain production needed to sustain you each year.<sup>1</sup>

Urine is typically sterile and high in nitrogen, phosphorous, and potassium, and when diluted with water ~1:3 to 1:10 it can be easily used to add nutrients back to the soil.



From top. A urine diversion funnel directs urine below ground to infiltrate directly into the soil. Urine diversion can be placed within the barrel and as a separate male urinal. To reduce salt build-up, flush the soil with rainwater or greywater when possible.

Top left and clockwise. The aged (>4 months of composting) humanure (composted human feces) is easily shoveled into a wheelbarrow and used to amend the soil surface around a fruit tree. The humanure smells, looks, and feels like compost!

<sup>1</sup>Ecosanres.org



# PLANT YOUR ECOSYSTEM!



## Create Root Mass

Select and mix plants with shallow, deep, and far reaching root structures. Native bunch grasses have dense and deeply penetrating roots which are helpful for improving infiltration and de-compacting soil. Native trees add organic material through root mass underground which also promotes movement of air and water through dense soil layers.

## Encourage Ground Covers

Remember: woody mulch for most landscapes and straw/green mulch for vegetable gardens.



## Fix Nitrogen and more!

Select and pair plants to fix nitrogen (legumes), host and feed wildlife (pollinators, larval food sources, berries, etc), provide shelter (multi-storied combinations of plants), accumulate leaf litter, and more...

Native trees provide a protective canopy which creates a beneficial micro-climate for understory plants. Trees and shrubs often shed leaves seasonally which creates an organic duff layer that protects the soil surface underneath.



# Your actions impact your soil. Are they good or bad?

	DO YOU...	IMPACT	WHY?
<b>SOIL SURFACE</b>	Leave surface bare	<b>Bad</b>	Loss of top soil to wind & water erosion. Increased compaction of soil surface.
	Cover with landscape fabric	<b>Bad</b>	Prevents organic material (OM) and macro-organisms from improving soil. If using fabric to prevent weedy growth, consider using cardboard, burlap, or thick layer of organic mulch.
	Apply gravel	<b>OK</b>	May prevent compaction, reduce erosion, and protect from erosive forces, but does not improve soil OM. If gravel contains finer soil particles, may clog soil surface and cause ponding. Discourages beneficial critters.
	Apply straw mulch	<b>Good</b>	Increased OM content at soil surface. Straw provides carbon source and favors bacterial organisms. Most vegetables and annuals prefer bacterially dominated soils and access nitrogen in nitrate form. Additionally, fresh, green organic materials applied support bacteria.
	Apply woody mulch	<b>Good</b>	Increased OM content at soil surface. Woody mulch (e.g. tree trimmings) provides carbon source and favors fungal organisms. Most trees, shrubs, and perennials prefer fungal dominated soils and access nitrogen in the ammonium form.
	Promote Vegetation	<b>Good</b>	Roots assist with de-compaction of soil. Increases soil OM content, cycles nutrients, and provides habitat for organism life cycles. Use plants that build soil through root structures, leaf litter, nitrogen-fixing, etc.
	Rake soil surface; blow away leaves	<b>Bad</b>	Removes OM from system. Disturbs soil surface which may increase erodibility. Prevents stabilization of soil with vegetative cover.
<b>SOIL DISTURBANCE</b>	Frequently till or dig	<b>Bad</b>	Disturbs soil preventing soil structure formation which reduces presence of soil food web habitat. Increases erodibility of soil.
	Designate defined pathways for people and vehicles	<b>Good</b>	Concentrates soil compaction in fewer areas. If possible keep pathways permeable and use organic mulch.
	Apply herbicides	<b>Bad</b>	Inhibits ability for landscape to mature and stabilize vegetatively. May kill desirable plants. Adds harmful chemicals to environment.
<b>SOIL AMENDMENTS</b>	Use chemical fertilizer	<b>Bad</b>	Inhibits development of healthy soil food web by overwhelming soil with easily obtainable fertilizers and kills beneficial soil microbes. Generally chemicals should be avoided. Instead feed the soil not the plant by applying compost or mulch.
	Add sulfur, gypsum, other	<b>Mixed</b>	Depending on soil chemistry and production goals may or may not be helpful. Request advice from a soils expert.
	Inoculate with mycorrhizae	<b>OK</b>	Mycorrhizal inoculations occur naturally without the need for special products if soil conditions are set using good practices which promote soil health.
	Apply manure or compost	<b>Good</b>	Increases soil OM content; assists with development of healthy soil food web to stabilize cycling of nutrients. Increased OM assists with soil moisture retention and de-compaction of soil. Compost can be used to introduce, maintain, or alter soil food web by inoculating with beneficial microbes and life.
	Apply compost tea	<b>Good</b>	Compost tea (actively aerated) contains beneficial fungi and bacteria. In vegetable or fruit tree production more frequent applications may be desired.
	Concentrate surface flows	<b>Bad</b>	Concentration of surface flows should be avoided as higher energy flows are erosive and less water infiltrates into soil.
	Promote gentle and spreading flow of water	<b>Good</b>	Promotion of shallow, spreading surface flows allows for greater infiltration potential and reduces soil erosion.
<b>WATER MANAGEMENT</b>	Promote infiltration	<b>Good</b>	Infiltration areas should be promoted and maintained to increase soil moisture retention and storage for longer-term plant use.

# Create Productive Soils with Free Resources & Cycle Your Trash!

CATEGORY	WASTE TURNED RESOURCE	RESOURCE BENEFIT	PROCESSING METHOD
<b>Water</b>	Rooftop Rainwater	Irrigation - mineral free	Passive or active rainwater
	Surface rainwater runoff	Irrigation of trees and shrubs	Infiltration / retention
	Greywater	Irrigation of fruit trees and shrubs	Distribution system with infiltration; not for vegetables or other plants with edible parts which contact water
<b>Plant Materials</b>	Leaf Litter	Fine organic material	Distributed as mulch layer / composted
	Tree or Shrub Prunings	Coarse organic material	Chipped or pruned to short lengths and distributed as mulch
	Cover crops	Green mulch	Use in vegetable gardens as a mulch layer, turned into soil, or composted
	Root mass	Fine organic material	Leave in place, no-till, grow corn, buckwheat, rye, etc
<b>Waste Materials</b>	Food waste	Organic material	Composted & applied as soil amendment
	Animal manures	Organic material/ fertilizer	Composted and/or applied as soil amendment
	Human manures	Organic material/ fertilizer	Composted and applied to soil amendment, not for use in most vegetable gardens
	Urine	Fertilizer (Nitrogen-Phosphorous-Potassium)	Diverted and diluted (at least 1:3) with water, applied to plant root zones; Caution: be careful with salt management and application
<b>Other Materials</b>	Newspaper	Carbon source. Use to balance with nitrogen. Once applied to soil allow a time lag to promote nutrient cycling by soil ecology.	Sub-surface mulch layer or shredded and composted
	Shredded Paper		Composted or cover source for composting toilet
	Sawdust		Composted or cover source for composting toilet
	Wood shavings		Composted or cover source for composting toilet
	Grain mash (brewing waste)	Food source	Chicken food/compost

## Additional Resources

- Watershed Management Group, [www.watershedmg.org/soil-stewards](http://www.watershedmg.org/soil-stewards)

## Soil Health and Ecology

- Lowenfels, Jeff and Wayne Lewis, *Teaming with Microbes*
- Dr. Pavao-Zuckerman, University of Arizona's Biosphere 2 Assistant Research Professor, [www.u.arizona.edu/~mzucker](http://www.u.arizona.edu/~mzucker)

## Composting Toilets

- David Del Porto and Carol Steinfeld, *The Composting Toilet System Book*
- Drangert, J. 1998. Fighting the urine blindness to provide more sanitation options. *Water SA*. 24(2): 157-164.
- Ecosanres.org --> Jönsson et al., 2004. Guidelines on the Use of Urine and Faeces in Crop Production. EcoSanRes. Stockholm Environment Institute.
- Höglund, C. et al. 2002. Microbia risk assessment of source-separated urine used in agriculture. *Waste Management and Research*. 20: 150-161.
- Joseph Jenkins, *The Humanure Handbook*, <http://humanurehandbook.com>
- Brad Lancaster, [www.harvestingrainwater.com/water-energy-carbon-nexus](http://www.harvestingrainwater.com/water-energy-carbon-nexus)
- David Omick, [www.omick.net](http://www.omick.net)
- Recode Oregon, [www.recodeoregon.org/composting-toilets-in-oregon](http://www.recodeoregon.org/composting-toilets-in-oregon)
- Rich Earth Institute, [www.richearthinstitute.org](http://www.richearthinstitute.org)
- U.S. Environmental Protection Agency. 1999. Water Efficiency Technology Fact Sheet, Composting Toilets. EPA 832-F-99-066.

## Other

- U.S. Environmental Protection Agency, [www.epa.gov/waste/nonhaz/municipal/msw99.htm](http://www.epa.gov/waste/nonhaz/municipal/msw99.htm)

# Charles Swanson

## Soil Steward & WMG Donor



*Charles and his wife Ileana and daughter Opal beside their composting toilet.*

### **Q: How did you get involved with WMG?**

I first got involved with WMG years ago when they installed a cistern and earthworks at my house with the University of Arizona's water harvesting class.

### **Q: Why did you participate in the Soil Stewards program?**

I got involved with the program because flushing the toilet uses a lot of water, and as a desert dweller, water is a top concern when trying to live conscientiously. We get great soil amendment with the composted humanure, too. I'd lived in places with composting toilets so I knew it was fairly straight forward and practical. Also, I was happy to be a participant in a program that facilitated the legitimization of composting toilets.

### **Q: What did you enjoy most about the program?**

I enjoyed the hands-on workshops when we were assembling the composting toilet. I also just enjoy going outside to use the bathroom.

### **Q: How has WMG impacted you personally?**

On a personal level, WMG has helped me live with a lighter footprint. I've also participated with some workshops, and I'm inspired by how they get so much done by working collaboratively with the community.

### **Q: Why do you give money to support WMG's mission?**

I support WMG because their work positively impacts the restorative qualities of natural systems and communities.

### **Q: How would you encourage people to get involved with WMG?**

I would encourage people to, first, go to a workshop or event and see what they do. Then, plug in by joining the Co-op or volunteering. Then share what you learned with everyone you know.



*A fig and pomegranate tree surround the composting toilet.*

# COMPOSTING TOILETS FOR THE PEOPLE: THE STRAIGHT POOP

Even though flush toilets have become the norm, pooping in our drinking water and flushing away soil resources doesn't make sense, and people are starting to explore other options. Until now, composting toilets have been primarily used in rural areas where sanitation services are not available. WMG is thrilled to show that composting toilets can be used at homes in our cities, providing substantial water and energy savings and creating a rich resource for our gardens.

## Our Pilot Program

We started by working with composting toilet experts to create low-cost, simple site-built toilet designs that would be most acceptable to Arizona Department of Environmental Quality (ADEQ). Then we launched a two-year program to build these composting toilets throughout Tucson and opened the program for individuals to apply. We sought early adopters—people with the most interest, need, and ability—to help the program succeed.



*The composting toilet is easily aerated with a compost crank.*

To drum up interest and build awareness, WMG offered two free informational workshops about composting toilets, which were also a pre-requisite to participate in the pilot. Seventy-five people attended these workshops, and from this group we selected 20 to become Soil Stewards. These Soil Stewards committed to building, using, and monitoring a composting toilet at their home, in addition to benefiting from a variety of educational workshops to round out their soils knowledge.

At regular intervals throughout the two-year program, the finished compost was tested by the University of Arizona Microbiology lab. All the samples received the highest rating of EPA Class A biosolids—safe to use in our yards!

*David Omick and Pearl Mast build composting toilets at a WMG workshop.*



## You Can Start A Composting Toilet Program. Here are some simple steps to start one in your own community.

**Step 1:** Research local regulations. Look into your county and state regulations concerning composting toilets. Commercial composting toilets are likely legal, and there may even be options for site-built designs.

**Step 2:** Find partners. Research who is using composting toilets, doing eco-sanitation work, or has an interest in water conservation, soil building, or water quality. Make sure to engage your county or state regulators, such as the Department of Environmental Quality, as partners.

**Step 3:** Build on existing resources. Check out [watershedmg.org/soil-stewards](http://watershedmg.org/soil-stewards) to see several videos and designs on site-built composting toilets. **Other great resources are:**

- [omick.net](http://omick.net)
- <http://humanurehandbook.com/>
- <http://www.recodeoregon.org/portfolio/legalized-site-built-composting-toilets/>

**Step 4:** Plan a small pilot program. Once your partners are in place, work with them to plan a pilot program with a manageable group of participants. Create a selection process for participants, have clear objectives, and have them sign a commitment form. Since you are piloting something new, request a temporary permit from your regulators and outline how the composting toilet will be evaluated.

**Step 5:** Work together for consistency. Take the time to work with participants to make sure they all follow the design and build the toilets correctly. Conduct follow-up visits after the toilet is in use and plan debriefing sessions with all participants for open discussion and troubleshooting.

**Step 6:** Evaluate your program and share successes. Get feedback in writing from all the participants. Define a plan with your partners to continue the program beyond the pilot phase and scale it up to include more people. Plan a tour, potlucks, or other events at participants' homes so people can show off their composting toilet and share their success.



*WMG's office composting toilet was one of the pilot toilets.*

### LESSONS LEARNED

- ✓ Regular visits with pilot participants will ensure proper use and maintenance, and you'll learn about seasonal and social factors that may affect use.
- ✓ An open format for sharing successes, failures, and solutions between pilot participants will improve the experience for all participants.
- ✓ Regular communication with regulators and experts throughout the process will effectively engage everyone in the success of the pilot and provide opportunities to troubleshoot together.



# YARD WASTE ISN'T TRASH. WE CAN COMPOST IT!

What's wrong with this picture? We often treat our leaf litter and plant pruning like garbage. We mow, blow, rake, and sometimes even vacuum up this material and send it to the dump! But wait! The plants in our yards depend on their "litter" to become part of the soil and supply them with nutrients.

That's why Watershed Management Group piloted a program in Tucson to help neighborhoods turn our organic yard "wastes" into a resource. Currently 25% of Tucson's residential garbage is organic yard waste. Too often this precious resource ends up in our garbage can or is picked up twice a year through the City's "Brush and Bulky" program. In partnership with three neighborhoods, we turned Brush and Bulky into Chipped and Mulchy!

## Our Pilot Program

We created a simple, one-year neighborhood mulching program and solicited neighborhood groups throughout the city to participate. The three neighborhoods chosen were, Dunbar Spring, Dodge Flowers, and Barrio Hollywood. All three neighborhoods have a history of doing group projects, specifically tree planting and water-harvesting projects.

Neighborhood leaders received training through our Soil Stewards program and worked with WMG to organize tree pruning workshops and clean-up days. Then, we hired a local company, Romeo Tree Service, to spend a day in each neighborhood with their commercial chipper to create mulch from the accumulated plant materials. The mulch was then distributed in neighborhood common areas or used in resident's yards.



## Here are some simple steps to start your own neighborhood mulch program.

**Step 1:** Start small with a pilot program. Choose a manageable area and a group of people that are likely to succeed.

**Step 2:** Find partners. Contact landscape, tree trimming, and recycling/waste companies to see if they have a green waste program. Partner with a business that has a commercial chipper/shredder. Reach out to city departments such as Environmental Services (or Waste Management), Department of Transportation, and Parks and Recreation.

### LESSONS LEARNED

- ✓ Partnering with a business that has a commercial chipper will be more cost-effective than purchasing one. Good chippers are very expensive and can also be dangerous to operate.
- ✓ If your city does have a bulk trash program, you can coordinate your activities with the regular scheduled pickup date.
- ✓ Planning educational activities around weeding can divert even more waste from the landfill. Often weeds can be incorporated into organic mulch in our yards to help build soil nutrients.

**Step 3:** Mobilize your community. There are many ways to mobilize the community, including: providing an educational opportunity; beautifying public spaces; and providing free mulch, plants, or seeds for people to use in their yards. Communicate with neighbors in person and utilize multiple communication strategies including paper flyers, email, and social media. Choose a cohort of leaders that can help with planning and rotate responsibility over time.

**Step 4:** Plan community events. Plan a tree trimming day and mulching day within a few weeks of each other. Recruit an arborist or tree pruning expert to teach people proper pruning techniques. Schedule these events twice a year, when pruning and beautification projects are most needed.

**Step 5:** Evaluate your program and share successes. Get feedback from the neighborhood residents and keep track of successes and failures. Create a plan with your partners to continue the program beyond the pilot phase or scale it up to include more people in the program. Reward your neighborhood leaders and celebrate your successes with a neighborhood party.

## Success Starts with Your Soil

*Soil is the foundation  
of your yard.*

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**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.*