

# Rainwater Harvesting and Water Reuse

Water Conservation: half-empty or  
half-full?

Regional Webinar Series

*March 1, 2011*



Applying knowledge to improve water quality

**Southern**  
Regional Water Program

A Partnership of USDA NIFA  
& Land Grant Colleges and Universities

**UF** | UNIVERSITY of  
**FLORIDA**  
IFAS Extension



# Water Conservation: Half Full or Half Empty?

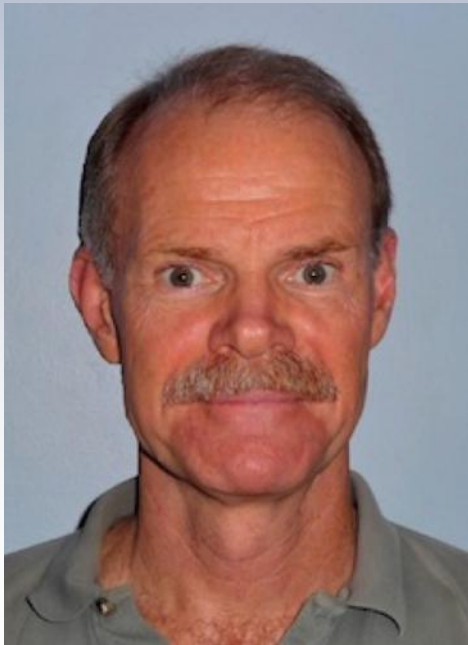
American Rainwater Catchment  
Systems Association -

[www.arcsea.org](http://www.arcsea.org)

501(c)(3) nonprofit

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Is the glass half empty or half full?

*To lighten the moment...*

*this question could be finally answered*

*if the glass were half as large*



# The mission of ARCSEA

To promote sustainable rainwater harvesting practices to help solve potable, nonpotable, stormwater and energy challenges throughout the world



# Rainwater code, legislative and policy status

- 14 States have or propose pro-rainwater harvesting (RWH) legislation: AZ, CA, CO, FL, GA, HI, IL, NM, NC, OH, OR, TX, UT, VA, WA

See ARCSA website - [www.arcsa.org](http://www.arcsa.org) - for details

- 34 states are relatively neutral and allow RWH in some form
- Only two states present obstacles to RWH -

## *Colorado & Washington*

- IAPMO Green, ICC-IGCC - Potable & Nonpotable RWH Codes ready for jurisdictional adoption
- NSF - Standards for Potable & Nonpotable Rainwater Harvesting
- ASPE - Co-sponsor with ARCSA - Design & Construction manual



# Conservation & Efficiency First

- Conservation - change habit patterns
- Efficiency - same habits with less waste
- It makes little sense to invest in RWH to augment supply if conservation and efficiency opportunities have not been fully exploited.
- If one were driving down the road and found that their parking brake was on, the first solution would not be to buy a bigger engine.



# Water = Energy

California: 18% of energy budget to deliver & treat water

Florida: 80 million gallons of water per day needed for  
planned nuclear power

*It takes massive quantities of energy  
to treat and move water.*

*It takes massive quantities of water  
to produce and distribute energy.*

Conserving either conserves both



# Florida's Septic Conversion Rule

- **Florida Admin Code 64E-6.0185** *“...a septic tank serving a single family residence may, at the owner’s discretion, be converted into a cistern...”*
- Three things to be particularly attentive to:  
**Bugs, Buoyancy & Overflow**

Fran Wagner - pioneer - will be honored by FL Legislature





# Florida DOH inspecting sanitized tank





# Florida Department Of Health potable water statement

“...The Bureau of Water Programs endorses the use of residential rainwater cisterns for non-potable or potable water uses in residences where they are properly installed and maintained...”



# Rain Barrels to Reservoirs...



65-Gallon Moby

Rain Water Solutions



250-Gallon to **4 Million-Gallon**, modular, NSF  
Annex G-certified potable tank  
Fiber Technology Corporation



... and in between



Kilauea Lodge, Volcano Village, Hawaii



Sustainable rainwater harvesting diminishes the stormwater impact of rain events, harvests a wonderful commodity for later use, decreases the water/energy footprint, displaces the need for an equal amount of highly treated potable utility water and then further diminishes stormwater impact by slowly infiltrating any wasted overflow.



# Energy Efficient practices example

## Gravity feed for irrigation systems

Some low pressure drip emitters, though advertised to require 25 psi, will function admirably with 4 psi or less, which equates to 10 feet of head pressure. Supply tank can be refilled by solar pump.

# ARCSEA's biggest concern is...

*...poorly designed, installed, or maintained rainwater harvesting systems*





# ARCSEA Educational Programs

- 100-Level Introductory
- 200-Level Accreditation Workshops
- 300-Level presentations
- 300-Level Design & Construction Workshops





# Resources

- [www.arcsa.org](http://www.arcsa.org) - free public domain rainwater harvesting manuals: TX, VA, GA, FL, HI, Ontario
- ARCSEA website - “Resources & Documents” - many free publications and hyperlinks to rainwater information around the world



# Upcoming Programs

- 100, 200 & 300 Design & Construction Athens Georgia May 23-27
- 200-Level Accreditation Workshop Daytona Beach - dates to be announced
- Check [www.arcsa.org](http://www.arcsa.org) for latest schedule



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