Harvesting Rainwater: More than just rainbarrels

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Florida’s water story

- Why care about conservation?
  - Limited water resources
  - Saltwater intrusion
  - Droughts
- Beneficial use of hydrologic cycle
- Old technology gains new life
Why do Gardeners Care?

- Up to 50% of water use is outdoors
- Irrigating ¼ acre five times = a lifetime of water
- It makes sense to conserve
Rainbarrels

- Under a downspout or eave
- Collects morning dew too
- Extends H2O availability

- Food grade barrels – can be hard to find
- Screen to exclude insects
- Clean periodically

Beautiful example in Hillsborough Co
Check it out
“Rainfall Math”

1” rainfall on 1,000 sq. ft roof = 623 gallons

ex: 1” rain on 2,500 ft² roof = over 1,500 gal.
Cisterns

- Greater storage volume than rain barrels
- Variety of styles and materials
  - Above, below or half-submerged
  - Polyethylene, cement, fiberglass
- Historical
- Need to be able to clean out
- Commercial applications

1,500 g in Oregon
Sumter Extension Office

• From the roof to storage – make it attractive

Photos courtesy: Holly Tuxbury, Sumter MG
Cistern Water:
How much and what do I do with it?

- How much can one hold?
- $6' \times 6' \times 6' = 1,600$ gallons

- What to do with it?
  - Water in new plants
  - Water thirsty plants
  - Wash the car
  - Fill the fish pond
  - Indoors – let’s talk
Limiting Factors

- Many local regulations
- Use: landscapes, wash cars
- Sufficient elevation or pump
- Cost: It depends
  - $300 (r) - $1,500 (c)
  - Increases with extra plumbing
  - Excavation?
- Grants @ SFWMD
Additional Considerations

- Gutter rain guards help
- Roof washer or sand filters
- If open, use of Dunks™ or other pesticide is necessary
Rain Gardens –
A mini-retention system

- On-lot infiltration, soakaway pits, bioswale
- Prevent erosion and runoff
- Pollutant collection
- Water stays on site
- Slow percolation
- Beautiful!

Source: City of Maplewood, MN
Careful Planning

- Take advantage of existing drainage
- Away from structure to prevent flooding
- Choose resilient plants
- 20-30% of volume
- May need curb-cut
- 3’ above water table

Source: DNR.WI.Gov
Before and After

Source: www.LandandWater.com
How to Build a Rain Garden

- Partial excavation
  - Save “topsoil”
- Back fill with stone and gravel
- Some rules require a liner/sump
- Landscape!

Source: City of Maplewood, MN
Assure Success with Maintenance

- Water plants to establish
- Mulch planting
- Vigilant weeding
- Make sure plants are happy
- Effective for decades

Source: Dan Culbert, IFAS
Green Roofs

- Reduces temperatures 12-45 degrees
- Green roof absorbs 45% runoff vs. 9% without
- Reduce air pollution
- Chicago = 300,000 ft²

Source: umich.edu
Examples

- Chicago City Hall
- University of Central Florida Student Union
Green Roof Challenges

- Small soil profile
- Weight is biggest issue
- High or low plantings

Source: www.nasa.gov  NYC
Don’t Have a Flat Roof?

- North Carolina home – boxes hold media and plants on a steep slope
- Germans have installed 34M ft² in 20 yrs
Local Regulations Prevail

- Rain barrels – some communities prohibit
- Cisterns – local ordinances vary greatly
- Rain gardens – assure does not interrupt planned drainage

Succulents and Cacti at Washington DC offices of ASLA
Good Gardening Practices

- Right Plant : Right Place
- Develop drought tolerance
- Garden wisely
  - Irrigation
  - Fertilization
- Sharp mower blades
Largest in US – Ford Truck Assembly in MI
More information

- University of Florida
  - Cisterns: edis.ifas.ufl.edu/ae029
  - Living Green series
  - Program for Resource Efficient Communities

- www.Stormwater.ucf.edu

- http://www.composters.com

- www.FloridaForce.org

- Magazine.Audobon.org for list of raingarden plants
Questions?

Whiskey’s for drinking.

Water’s for fighting over.

Mark Twain
Rainwater Harvesting: More Than Just Rainbarrels

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