Rainwater Harvesting Education in Texas

2007 American Rainwater Catchment Systems Association Conference Hawai'i Volcanoes National Park on the Big Island of Hawai'i

Billy Kniffen
Texas Cooperative Extension
The mission of Texas Cooperative Extension as part of the A&M University and the Land Grant College System is “to provide quality, relevant outreach and continuing education programs and services to the people of Texas.”

The Texas Water Resources Institute, a unit of the Texas Agricultural Experiment Station and Texas Cooperative Extension, and member of the National Institutes for Water Resources, provides leadership to stimulate priority research and Extension educational programs in water resources within the Texas A&M University System and throughout Texas.
Master Gardener
“Rainwater Specialist”

  - 5 Workshops – Menard, Edinburg, Ft. Worth, Menard, Grandbury – 165 volunteers
  - 15-20 hours of training
  - 15 hours of volunteer service required in Rainwater Education
$200 Registration Fee
Limited to 30 People

- Notebook
- Power Point hard copy to take notes on
- Trash can rain barrel
- Build wildlife watering device
- CD of all Power Points
- Meals and refreshments
- Hands-On Installation of a Collection System for Landscape
Table 1. Overall program evaluation results (1=poor and 5= excellent).

**Overall Evaluation**  **Average Response 4.9**
- The objectives of this program were: 4.9
- The organization & presentation of material was: 4.8
- The PowerPoints presenting the material were: 4.7
- My expectations were: 4.9
- Overall, I consider this program: 5.0
- My attendance at this program should prove: 4.8

Table 2. Evaluation results of knowledge before the program (1= least valuable and 5= most valuable).

**Topics Average Response 2.9 average**
- Understanding of how rainwater addresses water quality and quantity issues: 3.2
- Understanding of stormwater and its impact on the environment: 3.1
- Understanding of rangeland watersheds: 2.7
- Understanding of collection and storage of harvested rainwater: 3.1
- Understanding of filtration and sanitation of harvested rainwater: 2.9
- Understanding of how landscaping affects water usage: 3.5
- Understanding of how a soil storage and infiltration system works: 2.8
- Understanding of how rainwater can be used to water wildlife: 2.8
- Understanding of how raingardens can be used to harvest rainwater: 2.6
- Understanding of how to implement a youth education session: 2.7
Table 3. Evaluation results of knowledge after the program (1= poor and 5= excellent).

<table>
<thead>
<tr>
<th>Topics</th>
<th>Average Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding of how rainwater addresses water quality and quantity issues:</td>
<td>4.8</td>
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<tr>
<td>Understanding of stormwater and its impact on the environment:</td>
<td>4.8</td>
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<tr>
<td>Understanding of rangeland watersheds:</td>
<td>4.3</td>
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<tr>
<td>Understanding of collection and storage of harvested rainwater:</td>
<td>4.8</td>
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</tr>
<tr>
<td>Understanding of how raingardens can be used to harvest rainwater:</td>
<td>4.6</td>
</tr>
<tr>
<td>Understanding of how to implement a youth education session:</td>
<td>4.2</td>
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</tbody>
</table>

Table 4. Retrospective Pre-Post Test Percent Knowledge Gained

| % Knowledge Gained | 58% |
Table 5. Evaluation results of the **ability to educate others** on selected topics (1= poor and 5= excellent).

<table>
<thead>
<tr>
<th>Topics</th>
<th>Average Response</th>
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</thead>
<tbody>
<tr>
<td>Introduction:</td>
<td>4.7</td>
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<tr>
<td>Stormwater:</td>
<td>4.6</td>
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<tr>
<td>Rangeland Watersheds:</td>
<td>4.3</td>
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<tr>
<td>Collection and Storage:</td>
<td>4.8</td>
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<tr>
<td>Filtration and Sanitation:</td>
<td>4.6</td>
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<tr>
<td>Landscaping:</td>
<td>4.7</td>
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<tr>
<td>Soil Storage and Infiltration:</td>
<td>4.4</td>
</tr>
<tr>
<td>Wildlife:</td>
<td>4.6</td>
</tr>
<tr>
<td>Raingardens:</td>
<td>4.7</td>
</tr>
<tr>
<td>Youth Education:</td>
<td>4.5</td>
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</tbody>
</table>
Education Team

- Billy Kniffen – TCE Extension Agent – Ag/NR
- Dr. Monty Dozier – TCE Water Quality Specialist
- Dr. Bruce Lesikar – TCE Storm Water Engineer
- Dr. Jim Cathey – TCE Wildlife Specialist
- Justin Mechell – TCE Engineer, TCE Assistant
- John Smith – TCE Soils/Crop Sciences Dept. TCE Assistant
- Molly Griffin – TCE Engineering Dept., TCE Assistant
- Bryan Davis – TCE Extension Agent – Ag/NR
- Mike Mecke – TWRI Water Management Specialist
- Local Extension Agents and Master Gardeners
Classroom Training
Demonstrations
Dip Irrigation Using A Trash Can
Construction and Installation
Hands-On
Why and How
Displays & Supplies
Tour Installations
Rainwater For Greenhouse and Water Garden
Homes & Schools
Stormwater Management
Stormwater Management
Rain Garden Construction
Raindrop Impact
Recognition & Responsibility
Everyone Constructs A Wildlife Waterer For Their Trash Can
Everyone Gets A Trash Can Rain Barrel
Menard Class of 2007
Texas Master Naturalists
Master Naturalist 3 Day Advanced Training in “Rainwater Stewardship”
Classroom and Field Work
Paired Watershed Plots
Where Does The Rainfall Go
Youth Education and Wildlife Waterer
Master Naturalist Class of 2006
Manuals
Future Programming

- Master Gardener “Rainwater Specialist near Houston September 13-14, 2007
- In-home Potable Rainwater Workshop September 19, 2007 in Dallas
- In-home Potable Rainwater Workshop September 25, 2007 near San Antonio
- 2008 – more of the same
Harvesting, Storing, and Treating Rainwater for Domestic Indoor Use

- Texas Commission on Environmental Quality
- January 2007
- www.tceq.state.tx.us/publications
- GI-366
Efficient water use is increasingly important to the Western United States. With the growing population and limited supply of both groundwater and surface water, homeowners must use water wisely. Rainwater harvesting is an innovative approach anyone can use.

Harvesting rainwater for use in the home landscape:
- Saves you money by reducing your water bills.
- Reduces demand on the municipal water supply.
- Makes efficient use of a valuable resource.
- Reduces flooding, erosion and contamination of surface water with sediments, fertilizers and pesticides in rainfall run-off.
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