

RAINWATER HARVESTING

FREE WORKSHOP FOR THE PUBLIC—SATURDAY, MARCH 23
TRADE WORKSHOP- MONDAY MARCH 25TH AND TUESDAY—MARCH 26TH
Space is limited – you must register online or by phone to attend

Workshop Location:
Highland Center for Natural History
1375 Walker Rd.
Prescott, AZ 86303

No Fee – Public Invited
Saturday, March 23, 2013

Introduction to Rainwater Catchment
9:00—10:00 Register & Vendor View
10:00 – 4:00 PM Workshop

One-day public workshop is an introductory course for anyone interested in general applications for harvesting rainwater for non-potable use including landscape and food production. Overview on the following:

- history
- active and passive capture methods
- basic calculations
- landscape application
- wildlife management

Please bring a drink, lunch and afternoon snacks

Presented By



e-mail: water@interisland.net
360.317. 4192
<http://www.arcsa.org>



Register on the web: www.arcsa.org

Educational Event Sponsored By:



- **SKYWATER**
- **Citizens Water Advocacy Group**
- **Highland Center for Natural History**

Water Smart



LOCAL WORKSHOP CONTACTS:

T. Barnabas Kane and Assoc.
928-445-3515

e-mail: bkane@tbkadesign.com

City of Prescott—Water Smart
928-777-1645

e-mail: water.smart@prescott-az.gov

Register for the Prescott Workshop
ONLINE TODAY:

<http://www.arcsa.org>

Prescott, AZ—Workshop for the Trade
Professional - Accredited - Cost to Attend
March 25th and 26th, 2013
9:00 AM – 5:00 PM
Lunch and refreshments provided

Workshop Fee Schedule: Registration required.

\$ 395 2-day Workshop

\$ 150 ARCSA EXAM FEE

\$ 60 ARCSA Individual Membership Dues

The professional level workshop is an in-depth course required for ARCSA Accredited Professional (AP) Certification. Training will cover active and passive design and installation for both outdoor and in-home rainwater use.

Gain knowledge in the business of planning, designing and installing rainwater harvesting systems.

- sanitation or potable uses
- rules and regulations
- guidelines and restrictions
- business management
- project planning
- site and installation safety
- system construction and maintenance

The course follows the Texas A&M University “Rainwater Harvesting Planning” manual, which is included in the trade workshop fee.



Rainwater Harvesting Workshop 2013

Space is limited—must register to attend

[Register on the web:](http://www.arcsa.org)

www.arcsa.org

Rainwater Harvesting

No Fee — Open to Public

Saturday, March 23, 2013

Introduction to Rainwater Catchment

9—10 AM Register and vendor view

10AM - 4 PM Free Workshop & Presentation

For the Trade

Professional/Accredited - Registration Required

Monday & Tuesday, March 25th and 26th, 2013

9:00 AM – 5:00 PM

Workshop Location

Highland Center For Natural History

1375 S. Walker Road, Prescott, AZ 86303 | 928.776.9550

Classroom—The James Learning Center

<http://www.highlandscenter.org/>

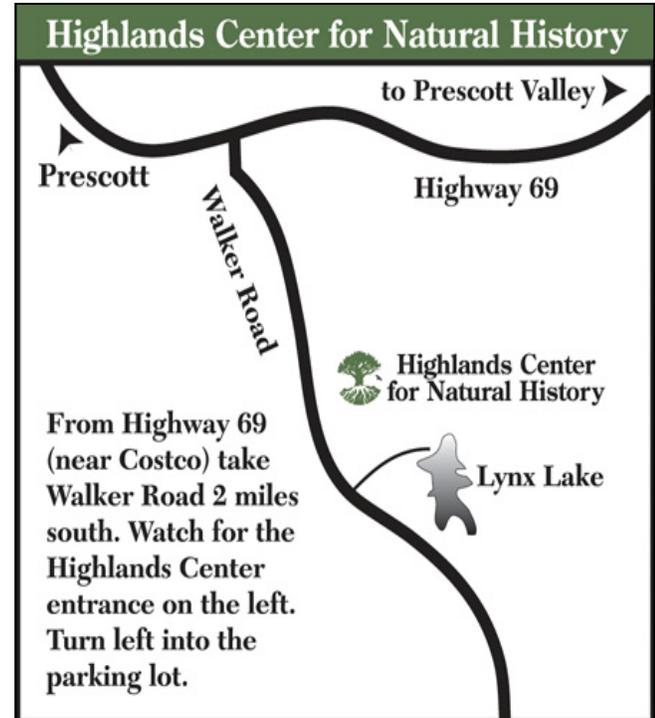
Basic Directions:

From Prescott

- Take Highway 69 east from Prescott.
- From Highway 69 (near Costco) take Walker Road 1.8 miles south.
- Watch way finding sign and Highlands Center entrance on the left—east side of Walker Road.
- Turn left into the parking lot.

From Prescott Valley

- Take Highway 69 west from Prescott Valley
- From Highway 69 (near Costco) take Walker Road 1.8 miles south.
- Watch for the Highlands Center entrance on the left—east



The Mission of the American Rainwater Catchment Systems Association - ARCSA is to promote sustainable rainwater harvesting practices, to help solve potable, non-potable, stormwater and energy challenges throughout the world.

REGISTER FOR BOTH PUBLIC AND TRADE WORKSHOPS ONLINE TODAY

<http://www.arcsa.org>

T. Barnabas Kane and Assoc.

928.445.3515

e-mail: bkane@tbkadesign.com

City of Prescott, Water Smart

928.777.1645

e-mail: water.smart@prescott-az.gov



ARCSA Rainwater Harvesting Workshop

(American Rainwater Catchment Systems Association, www.arcsa.org)

Primary Sponsor: City of Prescott

Co-Sponsors: T Barnabas Kane & Associates, University of Arizona Cooperative Extension in Yavapai County, and the Highland Center for Natural History

Location: Highland Center for Natural History, 1375 Walker Rd, Prescott, AZ

Introduction to Rainwater Catchment

Saturday, March 23, 2013; 10AM– 4PM ; Bring your own lunch and snacks; registration begins at 9AM
http://arcsa.org/calendar_day.asp?date=3/23/2013&event=171

This one-day workshop is an introductory course for anyone interested in general knowledge about rainwater harvesting for non-potable applications. This course provides an overview of rainwater harvesting history, methods and applications, including presentations by local experts on water conservation, landscape irrigation, large scale municipal applications, clean waters and more.

Accredited Professional 2 Day Workshop (INTRO Level course is not required for 200-level course.)

Monday & Tuesday, March 25-26, 2013; 8:30AM – 5PM ; \$395

Lunch and coffee provided. http://arcsa.org/calendar_day.asp?date=3/25/2013&event=172

This two day AP-level workshop is an in depth rainwater harvesting course required for those seeking ARCSA Accredited Professional (AP) status. This course provides attendees with knowledge for rainwater harvesting, both active and passive design and installation for both outdoor and in-home rainwater use; sanitation for potable uses; rules and regulations, guidelines and restrictions; business management; project planning; site and installation safety; and system construction and maintenance. The course will follow the Texas A&M University “Rainwater Harvesting Planning” manual, which is included in the cost. See following pages for more detailed Course Content & Schedule.

Registration Form

Name _____ Date _____

Phone _____ Email _____

Address _____ City _____ State _____

I am registering for Public Intro Workshop (FREE) 2-day Professional Workshop (\$395)

Please make checks payable to **T. Barnabas Kane & Associates** and return with form to
PO Box 2100, Prescott, AZ 86302

NOTE: Online registration and credit card payments can be made at www.arcsa.org or by calling
928.445.3515 or **928.777.1645**

Presenter Bio

Tim Pope, ARCSA President



Tim Pope has been active in the water conservation field since 1992, starting in Eugene, Oregon designing and building greywater systems and consulting with the Los Angeles Water Reclamation Department. Tim was contacted in 1998 and was hired by Canada Mortgage and Housing, to design and install a greywater recycling system on a 20-unit condo in Ottawa, Ontario. Tim was encouraged to move to Friday Harbor, Washington in 1995 to help with resolution of ongoing water issues. San Juan County, where Friday Harbor is located, instituted “alternative water source” guidelines in 1995, of which Tim was a co-author. Tim built his first Rainwater Catchment system for potable use on San Juan Island in 1997. Since that time he has designed and installed over 230 Rainwater

Catchment systems, of which 98% are for potable uses. He also encouraged San Juan County Commissioners to accept Rainwater Harvesting as a viable and legal water source for new construction.

Tim has been active in training both individuals and groups over the years in the proper construction of Rainwater Catchment Systems. Tim performed the first Accreditation Workshop in Hilo, Hawaii in September 2007 and has been teaching since. Tim has been a member of ARCSA since 2002 and has served as an appointed board member from 2005 to 2007. Tim was elected President of ARCSA in Hilo Hawaii in 2007 and 2009 in Santa Monica, California. Tim has seen the membership grow from less than 100 individuals to our present 650+.

Introduction to Rainwater Catchment (FREE)

Guest Presenters & General Schedule

In addition to a presentation by ARCSA President, Tim Pope, the Introduction to Rainwater Catchment workshop will feature guest presentations from several local experts. The exact schedule is TBD, but likely presenters will include:

- City of Prescott – WATER SMART credit program
- Highland Center for Natural History – LEED Building
- Barnabas Kane, Landscape Architect (TBKA) – Rainwater for landscapes
- Upper Verde River Watershed Protection Coalition (UVRWPC) – Macro Harvesting Project
- Citizens Water Advocacy Group (CWAG) – Local water advocacy
- Prescott Creeks – Rainwater harvesting for clean waters and healthy watersheds



Accredited Professional 2-Day Workshop General Course Content & Schedule

DAY 1

8:30 am – Check In & Registration (times and order of sessions may vary at different locations)

9:00 am - Introductions

This session will provide the group (1) the opportunity to introduce themselves and the rainwater industry they are involved with, (2) information on facilities ground rules, (3) an overview of the course, its purpose and structure, (4) a brief discussion of the water quality and quantity issues facing the Nation, and (5) review who ARCSA is and their mission.



9:30 am - Rainwater, Watersheds and Stormwater

Chapters 12,3,4,5. Discussions on nonpoint pollution, urban stormwater runoff and methods to reduce runoff through passive collection methods will be discussed.

Also a brief introduction to a complex system and rainwater uses will be discussed. This session will also describe practical business ethics and expectations of a professional. Safety concerns for the employees and construction sites will also be discussed along with assessing a location, working with clients and developing bids and contracts.

10:00 am – Design Standards, IAPMO and IPC Green Supplement Code Review

An addition to the workshop to provide students the latest guidelines and codes addressing rainwater capture. Rainwater Catchment Design And Installation Standards Revised 2010; Green Plumbing & Mechanical Code Supplement IAPMO -Section 505-Alternative Water Sources For Non-Potable Applications – Non-Potable Rainwater Catchment Systems 2010; The International Association of Plumbing and Mechanical Officials- ; and, the International Code Council International Green Construction Code (IGCC) Section 707 Rainwater Collection And Distribution Systems, 2010

11:00 a.m. – Rainfall Data, Estimating Supply and Demand

Chapters 6,7,8,9. This session will look at rainfall patterns, intensity, frequency, monthly and annual amount, and drought. There will be discussion on the amount of runoff from various surfaces, estimating runoff amounts and balancing the demand with the potential runoff or supply.

12:00 – LUNCH

1:00 p.m. - Rainwater Collection - Rooftop to Catchment Container

Chapters 10, 11, 12, 13. This session will last the rest of day 1. There will be discussions on roof type, calculating gutter size and material, leaders or downspouts, wet and dry conveyance and basic hydraulics. The methods of pre-filtration and screening, first flush diversions, leader and pipe sizing, storage containers above and below ground, calming inlet and other parts.

5:00 pm – Day 1 Complete

DAY 2 : 8:30 am - Check In & Registration

9:00 a.m. – Dry and Wet Conveyance and Basic Hydraulics

Chapter 13. Piping for a wet system requires a base knowledge in hydraulics and friction loss in sizing conveyance piping. This session will discuss these calculations and students will have a chance to solve friction problems. There will be a review of sizing gutters, downspouts, supply and demand and other first day questions.

10:30 a.m. – Piping, Fittings, and PVC

Chapter 13. Pipe material, sizing, connecting and marking has to be done in any rainwater collection system. This session will discuss pipe material, problems and solutions in selecting and connecting various types of piping and connections.

11:15 a.m. – Pumps and Controls

Chapter 15. Just as the storage tank is the heart of the rainwater system, the pump is the most crucial component of a pressured distribution system. Pumps are sized by performance specifications of a certain flow rate at a given pressure. This session will look at pump curves and calculating friction and other factors in selecting the right pump.

Noon -LUNCH



1:00 p.m. Sanitation

Chapter 16. The most critical, complicated and controversial topic in the rainwater harvesting planning process is sanitation. Providing safe potable water is critical for the health of those consuming rainwater and paramount for those installing potable and non-potable systems. There are a number of potential toxins and pathogens that can enter the system along the process and the final step in construction is developing a sanitation system to match the needs of the client. This session will cover the primary toxins and pathogens and methods to prevent or remove these from being a potential hazard.

2:15 p.m. – System Maintenance

Chapter 17. The biggest challenge is constructing a rainwater collection system is building one that both provides for the customer's needs and almost maintenance free. Once completed the responsibility is turned over to the owner/operator to maintain a sufficient supply of safe water for its intended use. The system must be easy to maintain. The installer should provide the customers with a booklet outlining maintenance, check sheet with schedule and specific maintenance responsibilities, a trouble shooting checklist, a product list with warranties, resources and contact information. Also installers may develop a maintenance contract with customers to also check and maintain an installed system.

3:00 pm - Review, Questions, Final Course Assessment/Course Evaluation and Certificates

A review of all sessions, question and answer period and a post-course evaluation will be administered the course impact and knowledge gained. Certificates for additional 12 hours will be distributed as the class turns in evaluations.

3:00 p.m. – 4:00 p.m. - Day 2 Complete