Patchwork Blue
Survey of U.S. Rainwater Harvesting Laws

Chris Maxwell-Gaines, P.E.
Collecting Rainwater Now Illegal In Many States As Big Government Claims Ownership Over Our Water

In the United States, we are all under the illusion that we are free, and I am sorry to say that is a lie. Many of the freedoms that we enjoy are quickly eroding away, quickly transforming us into the land of the enslaved.

Many of you might not be aware that in the Western states, including Utah, Washington, and Colorado, have outlawed individuals from collecting rainwater on their own properties. The reason why? They claim that it belongs to someone else.
If You Catch And Use Rainwater In Colorado, You Are A Criminal

NICOLE GENTILE  MAR 22, 2016, 6:01 PM
Oregon man serving prison sentence for collecting rainwater on his own property

Thursday, August 07, 2014 by: Ethan A. Huff, staff writer

Tags: oregon, rainwater collection, big government

(NaturalNews) An Oregon landowner has been subjected to a 30-day prison sentence for what he says was a simple act of...
Rain Trust
An Oregon man was not recently jailed simply for collecting rainwater on his own property. See Example(s)

CLAIM
An Oregon man was jailed for collecting rainwater on his own property.

RATING
MOSTLY FALSE
Rainwater Harvesting: Supply from the Sky

A PUBLICATION OF THE CITY OF ALBUQUERQUE

Design of Rainwater Harvesting Systems in Oklahoma

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Introduction

Rainwater harvesting is the process of capturing, storing, and using rainwater runoff in a sustainable manner. It involves technologies of harvesting rainwater that reduce the amount of stormwater sent to the sewer system. The benefits of rainwater harvesting include reduced runoff, improved water quality, and reduced water bills. Rainwater harvesting systems can be designed to capture rainwater from roofs, sidewalks, streets, or other impervious surfaces.

Rainwater harvesting systems are classified into two main categories: "on-site" and "off-site." On-site systems are those that capture rainwater on the property where it is to be used. Off-site systems are those that capture rainwater from a neighboring property or from a public right-of-way.

Design and Sizing

The first step in the design of a rainwater harvesting system is to determine the potential storage capacity of the system. This involves estimating the amount of rainwater that can be captured and stored within the system. The storage capacity is determined by the size of the catchment area and the amount of rainwater that can be stored in the storage tank.

Guidelines for the Design and Construction of Stormwater Management Systems

Developed by the New York City Department of Environmental Protection in consultation with the New York City Department of Buildings

July 2012

Rainwater Harvesting

GUIDELINES FOR SUSTAINABLE WATER SERVICES

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- Rain Barrels

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Rainwater Harvesting

GUIDANCE TOWARD A SUSTAINABLE WATER FUTURE

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International Plumbing Code (IPC)

- International Code Council
- Developed International Green Construction Code (IgCC) as a supplement in 2012 with a section dedicated to water efficiency and conservation
- IgCC became part of main code in 2015
Universal Plumbing Code (UPC)

• International Association of Plumbing and Mechanical Officials (IAPMO)
• Developed Green Plumbing & Mechanical Code Supplement in 2010
Backflow Prevention Regulations

- Based on “Degree of Hazard”
- No formal regulation at national level
- Safe Water Drinking Water Act
- State, County, and Municipality regulations vary greatly
- States develop rules but give them over to municipalities to administer
- EPA published Cross-Connection Control Manual
NSF/ANSI Standards

• **NSF P151**: Certification of Rainwater Catchment System Components
• **NSF/ANSI Standard 61** - Drinking Water System Components Health Effects
• **NSF/ANSI Standard 53-2007a** - Drinking Water Treatment Units - Health Effects
• **NSF/ANSI Standard 55** - Ultraviolet Microbiological Water Treatment Systems
• **NSF/ANSI Standard 60** - Drinking Water System Chemicals Health Effects
ARCSA/ASPE/ANSI 63-2013: Rainwater Catchment Systems

- Approved on November 14, 2013
- Jointly developed by ASPE and ARCSA
- Co-sponsored by IAPMO and NSF International
- Assist engineers, designers, plumbers, builders/developers, local government officials, and end users in safely implementing a rainwater catchment system using precipitation from rooftops
ARCSA/ASPE/ANSI 78-2015: Stormwater Harvesting System Design

• Approved on August 3, 2015
• Jointly developed by ASPE and ARCSA
• Co-sponsored by IAPMO and NSF International
• Provides guidance on how to install and maintain a safe alternative to utility-provided water and to optimize stormwater utilization to reduce dependence on municipal potable water systems
Literature Review

✓ Rainwater Harvesting State Regulations and Technical Resources
  – SA Loper, Pacific Northwest National Laboratory, June 2015
  – Produced for U.S. Federal Energy Management Program

✓ State Rainwater Harvesting Laws and Legislation
  – National Conference of State Legislatures

✓ Laws, Rules & Codes webpage
  – ARSCA

✓ Regulations & Statutes webpage
  – HarvestH2o.com
Surface Water Appropriations

Source: Gleick and Christian-Smith 2012
Plumbing Codes, by State

Source: State Plumbing Codes, Tests.com
Rainwater Regulations

- State Regulations
- Encouraged
- Limited
- No Regulations

Map of the United States showing the regulations for rainwater collection in different states.

Legend:
- Blue: State Regulations
- Green: Encouraged
- Light Blue: No Regulations
- Yellow: Limited
RWH Bills Filed Since 2008

Source: National Conference of State Legislatures
Types of Rainwater Harvesting Bills

• Rainwater harvesting licensure (TX)
• Prohibition of homeowner associations from preventing the practice (IL)
• Expand definition of plumbing (IL, TX)
• Tax credit for rainwater harvesting (NC)
• Defining need for permit (AR, CA, UT, WA)
• Exemption from ad valorem taxation (TX)
Unpassed RWH Tax Credit Bills

• North Carolina HB 1385 (2009)
  – Tax credit for the construction of cisterns on residential and commercial properties
  – Credit equal to 35% of an eligible cistern cost, including modifications to existing plumbing systems necessary for operation of the system

• New Mexico SB 16 (2014)
  – “Water harvesting income tax credit” to provide incentive for homeowners and businesses to use harvested water
  – Credit equal to 20% of the purchase and installation costs of the system, up to $5,000. Earmark max annual aggregate of $2,000,000/year

• Arizona HB 2330 (2017)
  – Tax credit for installing a residential “water augmentation system”
  – Credit equal to 25% of the cost of the system not to exceed $1,000
Why Regulations are Necessary?

- Regulations of RWH is interpreted through other regulations:
  - Water well and private water systems
  - Stormwater management and green infrastructure
  - Reclaimed water
  - Cistern or tank construction standards
- Clarify authority of review
- Prevent misinformed implementation
Goals of RWH Regulations

• Define RWH as legal practice
• Promote the use of rainwater while safeguarding public health
• Make permitting predictive
• Avoid restrictive policies
• Define the requirements of RWH in relation to existing code
• Make it easy for the public to understand and implement
• Standardize and streamline application processes
Rainwater Regulation Hurdles

- **Political**
  - Codes and Standards
- **Water Rights**
  - Prior appropriation issues
- **Economics**
  - Conflicts with purpose of water utility districts
- **Health Concerns**
  - Backflow / Cross-connection
  - Mosquito breeding
Nice Effort, but...

- Unfunded or “forgotten” mandates to promote RWH
- Typically it goes like this...
- *The Department shall develop by [DATE], guidelines regarding the use of rainwater. The guidelines shall describe the conditions under which rainwater may appropriately be used and for what purposes.*
- *The Department shall promote the use of rainwater as means to reduce fresh water consumption, ease demands on public treatment works and water supply systems, and promote conservation.*
- Texas, Virginia, Oklahoma, Arizona, Nevada, Illinois
Let’s Take a Closer Look
AB 138 (2017)

• Provides that the de minimus collection of precipitation from the rooftop of a single-family dwelling for non-potable domestic use is exempted from the requirements of chapter 533 of NRS and thus may be collected without a water right or permit to appropriate water

• Larger rainwater harvesting systems would need to apply for a permit to the Division of Water Resources
SB 32 (2010)

- Allows the collection and use of precipitation without obtaining a water right
  - If an underground storage container is used, then the maximum capacity is **2,500 gallons**. The system must be registered at the state engineer’s office.
  - If a covered storage container is used, then the maximum capacity is **two containers**, with **100 gallons** being the maximum capacity of any one container.
Colorado Laws and Regulations

SB 09-080 (2009)
• Allows limited collection and use of precipitation for landowners, only if:
  – Residential property uses a well for the water supply that is permitted for domestic uses, and there is no water supply available in the area from a municipality, and
  – The rainwater is collected only from the roof, and used only for those uses that are allowed by, and identified on, the well permit.

HB 16-1005 (2016)
• Allows the collection of precipitation from a residential rooftop if:
  – Maximum of 2 rain barrels with a combined storage capacity of 110 gallons or less are used;
  – Precipitation is collected from a single-family residence or a multi-family residence with 4 or fewer units;
  – The collected precipitation is used on the residential property only for outdoor purposes
The State Board of Health shall allow the use of a harvested rainwater system used for a non-potable purpose if the harvested rainwater system:

1. Is designed by a professional engineer licensed in Arkansas;
2. Is designed with appropriate cross-connection safeguards; and
3. Complies with the Arkansas Plumbing Code.
The NM Office of the State Engineer encourages the harvesting, collection and use of rainwater from residential and commercial roof surfaces for on-site landscape irrigation and other on-site domestic uses.

The collection of water harvested in this manner should not reduce the amount of runoff that would have occurred from the site in its natural, pre-development state. Harvested rainwater may not be appropriated for any other uses.
California Laws and Regulations

AB 1750 (2012)

• “Rainwater Capture Act of 2012”
• Provides that use of rainwater collected from rooftops does not require a water right permit from the State Water Resources Control Board
• Authorizes landscape contractors to install rainwater capture systems for outdoor uses
HB 749 (2009)

- Authorizes the State Building Code to permit the use of cisterns to provide water for flushing toilets and for outdoor irrigation in the construction or renovation of residential or commercial buildings or structures

- Prohibits any state, county, or local building code or regulation from prohibiting the use of cisterns for these uses
On October 12, 2009, the Department of Ecology issued an Interpretive Policy Statement clarifying that a water right is not required for rooftop rainwater harvesting.

If and when the department determines that rooftop or guzzler rainwater harvesting systems are likely to negatively affect instream values or existing water rights, local restrictions may be set in place to govern subsequent new systems.

However, Ecology generally does not expect the collection of harvested rainwater to cause problems or reduce the amount of runoff that would have occurred from the site in its natural, pre-development state.
Ohio Laws and Regulations

Ohio Revised Code §3701.344

- Defines “Private water systems” which are regulated by the Ohio Department of Health
- "Private water system" includes any well, spring, cistern, pond, hauled water, or recycled water and any equipment for the collection, transportation, filtration, disinfection, treatment, or storage of such water extending from and including the source of the water to the point of discharge
Texas Laws and Regulations

SB 2 (2001)
• Sales tax exemption / Ad valorem tax exemption

HB 645 (2003)
• HOA can’t restrict installation

HB 2430 (2005)
• TWDB shall establish a Rainwater Harvesting Evaluation Committee and provide report (raincat.ch/RWReport)

HB 4 / SB 3 (2007)
• Restricts the use of rainwater indoors to nonpotable use if connected to PWS / Backflow required
Texas Laws and Regulations

HB 3391 (2011)
• New state buildings shall have rainwater harvesting systems

SB 1073 / HB 3372 (2011)
• Allows rainwater to be used for potable indoor use if connected to PWS / Must be plumber with water supply protection specialist endorsement to install these

HB 1902 (2015)
• Defined rainwater as an “alternative onsite water”
SB 38 (2011)
• Amends the Illinois Plumbing License Law to include rainwater harvesting in the definition of “plumbing”
• Requires the Illinois Department of Public Health to adopt and publish a minimum code of standards for rainwater harvesting systems by 1/1/2012
• Requires rainwater harvesting systems and rainwater harvesting distribution systems to be (A) used only for non-potable uses and (B) constructed in accordance with the Illinois Plumbing Code
• Did not pass as introduced
The biggest obstacles do not come from the arena of engineering, but from the disciplines of politics, law, regulations, and standards.
What’s Next for ARCSA?

• Work with state legislators to develop consistent RWH regulations that fits their ultimate goal, whether it is conservation or stormwater management

• Sponsor research to show that RWH doesn’t diminish a “prior user’s” water supply

• Promote the idea of RWH “systems” to state governments and consumers, not just “rain barrels”

• Develop RWH regulation database on website
Thank you very much!!

Want a copy of my presentation or the regulation database, email me at:

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