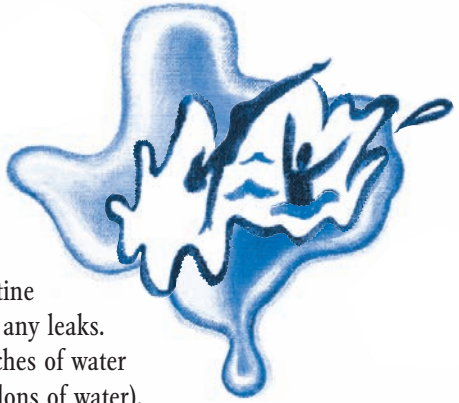


## 20. How much water does it take to have a swimming pool?

The average swimming pool takes 18,000-20,000 gallons of water to fill. This will cost you an average of \$80.00-\$100.00 on your water bill (Austin). Pools do not need to be refilled very often. After initially filling your pool you need to add water to it to replace water lost to evaporation, water splashing out, and routine maintenance. Make sure that your pool does not have any leaks. During the summer in Texas, pools can lose several inches of water due to evaporation every couple of days (about 120 gallons of water).



To figure out how many gallons of water it takes to fill your pool, use this equation:

$\text{Length (in feet)} \times \text{Width} \times \text{Average Depth} \times 7.5 = \text{Gallons of water to fill pool}$

## 21. I know about low flow showerheads, xeriscaping, and the best times of days to water plants, but what other things can I do to conserve water?

Besides the familiar ways of conserving water, you could research and try rainwater collection as a family project. Many families use this water, unfiltered, to supply lawns and gardens with water. Other families are relying solely on rainwater, and ditching their wells that have gone dry. Check with your city and county to see what tax incentives may be available to you.

## 22. Why can't we just get water from the oceans and desalinate it?

Cost is the main impediment to desalination. One of the biggest costs in desalination is energy. It takes a lot of energy to push the saline water through the membranes to desalinate it. It is becoming more cost effective in some areas, though.

Keep in mind, though, that when making the decision to go with desalination, you need to consider the possible negative environmental impacts of brine disposal. Brine is the super salty byproduct of the desalination process. Generally speaking, for a seawater desalination plant, the farther out to sea (or in the case of Texas, the Gulf of Mexico) you dispose of the brine the better, because the impact of the brine will be less in an area with high salt concentration. If the brine is disposed of closer to shore, in a bay for example, you run the risk of upsetting the delicate freshwater/saline water balance needed for the production of certain marine organisms such as shrimp and the smaller organisms that serve as their food supply. Transporting the brine farther out in the water for disposal (through a pipeline, for example) does increase the cost of disposal, however, which may effect the economics of doing desalination.

Seawater is not the only possibility for desalination. Our state has large quantities of brackish groundwater and some brackish surface water – water that is considered to be too saline to qualify as drinking water, but much less saline than seawater. There are several projects in operation in various parts of Texas that treat this brackish water to drinking

water standards and more projects getting underway, or on the drawing table. Because of the much lower saline content of this brackish water, it is more amenable to treatment and potentially less costly to treat. Brine disposal remains a significant issue that must be addressed even in treating inland brackish water, however.

### **23. Water is a precious resource. Why do we waste it?**

Most people just don't know any better, but by educating yourself and those you know, we're off to a good start. There is water everywhere and it appears to be a limitless resource; the reality is much different. For more information on water quantity and quality issues, or for suggestions on how you can get involved, and for copies of our other two water publications, contact the Lone Star Chapter Sierra Club, 512-477-1729. There are many water planning meetings around the state, and, quite possibly, not too far from where you live or work. For information on these meetings, see the website for the Texas Living Waters Project at <http://www.texaswatermatters.org>

## **RAINWATER HARVESTING**

### **24. What are rainwater catchment/containment/collection systems? Is it safe to drink water from them?**

Rainwater catchment systems are constructions of storage tanks, PVC pipes, and guttering used to collect water off of rooftops. The water will be as pure and clean to drink as your collecting pipes and storage tanks, assuming acid rain isn't an issue. To aerate water you could add a pump. Just be aware that small wildlife like squirrels may be able to get inside the tanks unless you have protective screens. Most families use the rainwater they collect for watering lawns and gardens, rather than for drinking.

### **25. What are the top four things I should know before I start collecting rain?**

Top four tips for someone considering rainwater harvesting:

1. Decide what you are going to do with it (i.e. water yard, drink, laundry, etc.).
2. Expect it to be very simple to install since it just uses gravity.
3. Be aware that if you are harvesting on a small scale, you won't be drinking it.
5. Determine how to get the water out. You may want to add a pump so water will exit with enough force that you won't be watering your garden trickle by trickle.

### **26. Is rainwater collection worth it?**

Wes Long and his family in Wimberley, Texas think so. "What prompted me to do this was my terrible experiences with well water. Now I'm asking myself do I want to go all out and do rainwater collection at 100 percent? I just love this stuff."

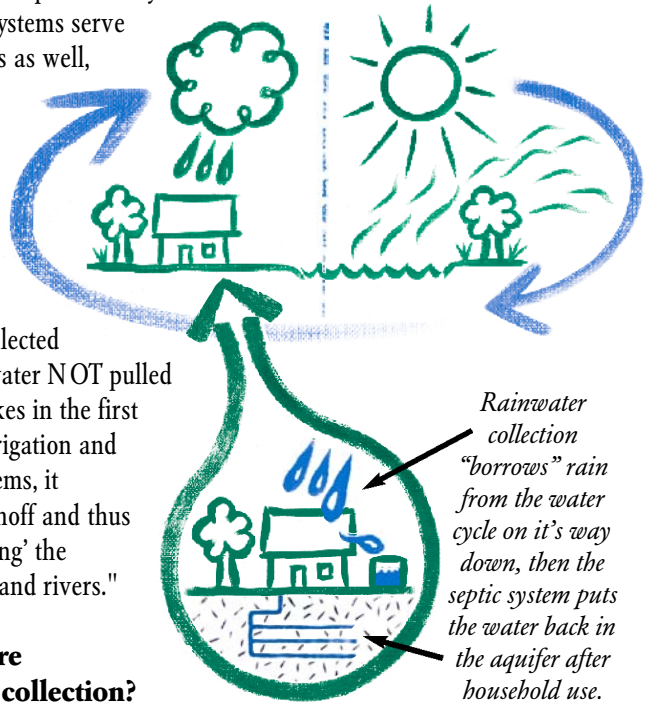
## 27. What's the biggest problem with rainwater collection?

Cost of storage. If you are not drinking the water, it costs approximately \$500, broken down as follows: \$200-250 for tank, \$50 for PVC pipe, \$150 for pump, \$20 for guttering.

## 28. If a large number of folks are using rainwater containment systems then wouldn't this reduce the amount of water available to refill rivers and streams?

"A good way to think about a rain collection system is to think of it as a way of borrowing water on its way to the ground," explains Larry Foster of Rainwater Collection Over Texas.

"In Texas most rain collection systems serve residences that have septic fields as well, thus, any water used in the home is 'borrowed' only until it enters the aquifers via the septic field. For larger commercial systems or governmental systems, i.e. the J.J. Pickle School at The University of Texas, the rain collected and used for cooling towers is water NOT pulled from the rivers, streams, and lakes in the first place. Where rain is used for irrigation and landscaping, as with septic systems, it returns to the soil as normal runoff and thus here again we are only 'borrowing' the water on its way to the streams and rivers."



## 29. Where do I go for more information on rainwater collection?

Although there are many sources, the following two publications are good resources.

1. "Rainwater Collection For the Mechanically Challenged," by Suzy Banks with Richard Heinichen, Tank Town Publishing, Dripping Springs TX, ISBN 0-9664170-0-3. Or call 1-512-894-0861 to have a copy sent to you. Cost is \$17.50/copy + postage.
2. "Texas Guide to Rainwater Harvesting, Second Edition," Texas Water Development Board in cooperation with the Center for Maximum Potential Building Systems. Cost is free, and can be downloaded from < <http://www.twdb.state.tx.us/assistance/conservation/Rain.htm>>.

For rainwater collection supplies, there are approximately 30 different Texas businesses and two are listed below as examples:

- ◆ Rainwater Collection Over Texas / P.O. Box 953 Dripping Springs, TX 78620, 512-288-7151, [raincollect@earthlink.net](mailto:raincollect@earthlink.net), [www.rainco.net](http://www.rainco.net)
- ◆ Tank Town, 1212 Quail Ridge, Dripping Springs, TX 78620, 512-894-0861, [tanktown@aol.com](mailto:tanktown@aol.com), [www.rainwatercollection.com](http://www.rainwatercollection.com).

# Index

- American Water Works Association, 9, 18
- Aquifers, 2-8, 12-13, 17-18
- Black Water, 12
- Boats, 14, 16
- Brackish Water, 20-21
- Chlorine, 2, 6, 10-11
- Colorado River, 4, 7, 14
- Confined Animal Feeding  
    Operations (CAFO), 13
- Cities
  - Abilene, 7
  - Amarillo, 4, 7
  - Austin, 4, 7, 11-12
  - Beaumont, 7
  - Bryan, 7
  - Corpus Christi, 7
  - Dallas, 7
  - Del Rio, 7
  - Denton, 7
  - El Paso, 4, 7
  - Ft. Worth, 7
  - Galveston, 7
  - Harlingen, 7
  - Houston, 7
  - Laredo, 7
  - Longview, 7
  - Lufkin, 7
  - Midland, 7
  - Odessa, 7
  - San Angelo, 7
  - San Antonio, 4, 7-8, 18
  - Victoria, 7
  - Waco, 7
  - Wichita Falls, 7
  - Wimberley, 6, 19, 21
- Counties
  - Bexar, 4, 18
  - Cameron, 4, 18
  - Dallas, 4, 18
  - Ector, 4, 18
  - El Paso, 4, 18
  - Galveston, 4, 18
  - Harris, 4, 18
  - Jefferson, 4, 18
  - Lubbock, 4, 18
  - Midland, 4, 18
  - Tarrant, 4, 18
  - Travis, 4, 18
  - Potter, 4, 18
- Desalination, 20
- Dillo Dirt, 12
- Drinking Water, 5-6, 8, 10-11, 14, 21
- Drinking Water Quality Report  
    (Consumer Confidence Report), 10, 14
- Drought, 4, 18
- Edwards Aquifer, 4-5, 7, 13
- Endangered/Threatened Species, 16-17
- Environmental Protection  
    Agency (EPA), 10-11, 13
- Far West Texas, 17
- Gas, 13-14
- Glen Rose Aquifer, 6, 7
- Grey Water, 12
- Groundwater, 3-9, 11, 13
- Gulf of Mexico, 20
- Hard Water, 11, 13
- Herbicides, 13
- Hydrologic Cycle see Water Cycle
- Industrial Water, 9, 12
- Jet Skis, 14
- Lakes
  - Austin, 4, 7
  - Meredith, 4, 7
- Lead, 13
- Lime, 12
- Mexico
  - Ciudad Juarez, 17
- Municipal Utility District (MUD), 8
- National Sanitation Foundation, 14
- Ogallala Aquifer, 4, 7
- Oil, 13-14
- Pecos Gambusia Fish, 16-17

# Index

- Pesticides, 13
- Pollution, 13, 14
- Potable Water, 5, 9, 11
- Private Water System, 6
- Public Water System, 6, 10, 15
- Rainwater Collection, 6, 20-22
- Recreation, 16
- Recycled Water, 9, 12
- Right of Capture, 3
- Rio Grande River, 17
- Rivers, 4, 7, 17-19, 22
  - Also see specific name
- Safe Drinking Water Act, 6
- Saturation Zone, 3, 8
- Sierra Club, 2, 17, 21
- Sludge, 12
- Soft Water, 11
- Springs, 5, 8
- Surface Water, 3-5, 13
- Swimming Pools, 16, 18, 20
- Tax Incentives, 20
- Terrorism, 13
- Texas Commission on Environmental Quality (TCEQ), 2, 4, 5, 6, 8-10, 13-15, 17
- Texas Legislature, 3
- Texas Living Waters Project, 17, 21
- Texas Natural Resource Conservation Commission (TNRCC), 2
- Trinity Aquifer, 5-7
- Unsaturated Zone, 3, 8
- Upper Rio Grande, 17
- Wastewater, 8-9, 12, 17
- Water Conservation, 19-20
- Water Cycle, 2
- Water Filters, 14
- Water Quality, 2, 5, 9-13, 16-17, 21
- Water Quantity, 2, 4, 6, 8-9, 13, 16-17, 21
- Water Rights, 3, 9
- Water Softener, 12, 14-15
- Water Supplier, 2, 9-11, 14
- Water Table, 3, 6
- Well, 3, 5-6, 8-10, 12-15, 19
- Water Sources, 4, 5, 8-9
- West Texas, 16-17
- Wildlife
  - Aquatic Habitats, 9, 16-17, 20
  - Fish, 5, 14, 16-17, 19
  - Oysters, 5
  - Shrimp, 5, 20
- Xeriscaping, 20

Additional copies of this book may be obtained from the Lone Star Chapter Sierra Club by calling 512-477-1729, or by emailing at [lonestar.chapter@sierraclub.org](mailto:lonestar.chapter@sierraclub.org)



SIERRA  
CLUB

---

FOUNDED 1892