Central Texas has been in a “La Niña Advisory” since June of 2010. The Climate Prediction Center states that La Niña conditions are expected to last through early 2011 and possibly into the summer. The El Niño-La Niña cycles result from changes in the global moisture patterns related to ocean temperature fluctuations in the equatorial Pacific Ocean. La Niña conditions usually produce drier-than-normal conditions for Central Texas. Indeed, without the influences of the hurricanes and tropical storms during the summer of 2010 the Barton Springs segment of the Edwards Aquifer would likely be experiencing drought conditions.

Although climate predictions indicated an unusually hot and dry summer for 2010, hurricanes and tropical storms turned out to be the dominant influence on the weather of Central Texas, accounting for nearly half of the annual rainfall to date (Figure 1). Just as springflow and groundwater levels had reached their

**Outlook: La Niña Conditions Mean Drier Times Ahead**

Each year, the District sponsors two scholarship contests—a college scholarship essay contest and a summer camp scholarship program—to raise awareness of local groundwater issues.

The $1,500 college scholarship will be awarded to the winner of the groundwater essay contest. High school juniors and seniors are encouraged to submit an essay focusing on any number of groundwater issues—non-point source pollution, pollution prevention, water conservation, hydrogeology, etc. Applications and essays are being accepted through 5:00pm on Friday, March 11, 2011.

This year the District will be able to offer several scholarships for students between 9 and 15 years old to the Edwards Aquifer Research and Data Center’s Aquatic Science Adventure Camp thanks to donations from Creedmoor Maha Water Supply Corporation, Texas-Lehigh Cement Company, and Goforth Water Supply Corporation. Interested students must submit an application and a 1-page essay/artwork entitled “Why I want to attend the Aquatic Science Adventure Camp!” Scholarship winners will be chosen in a random drawing; only completed applications with essays will be eligible. Applications and submissions are being accepted through 5:00pm on Friday, April 1, 2011.

For more information, applications, and eligibility information please visit: [http://www.bseacd.org/events/scholarships/](http://www.bseacd.org/events/scholarships/)

*Figure 1: Monthly rainfall chart from the District office in Manchaca, South Austin as compared to historical values from Camp Mabry in Austin. Note the dual peaks in rainfall in 2010 associated with Hurricane Alex and Tropical Storm Hermine. The rainfall in July came from a tropical depression that kept the total for the month near the historical average. Without that tropical depression, July would have been drier than normal, similar to August. Also noted are the El Niño and La Niña declarations from NOAA.*

*Figure 2: 2010 College Scholarship Winner, Maria Vice, and Director Bob Larsen.*
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BSEACD PERMITTING SUMMARY
(August 2010 TO December 2010)

<table>
<thead>
<tr>
<th>Permit Type</th>
<th>Number of Permits</th>
<th>Permitted Pumpage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exempt Wells</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>NDU General Permits</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Individual Production Permits</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Permit Amendments</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Transport Permits</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Exempt Wells - These are low capacity wells used solely for large tract residential or livestock needs. These wells are exempt from permitting but must be registered with the District and meet District Well Construction Standards.

Nonexempt Domestic Use (NDU) General Permits – This authorization is for wells that will be used solely for the domestic needs of residences located on small lots where there is no other alternative water source available. This pumpage is subject to drought restrictions, but may be authorized during drought since it is the sole source of domestic supply.

Individual Production Permits – All other new nonexempt wells must have one of these permits to be authorized for pumpage. All new Individual Production Permits for Edwards wells are designated as “Conditional” Permits, which means that they are interruptible and subject to 100% curtailment during extreme drought.

Permit Amendments – These amendments are required to increase authorized pumpage for existing permittees (permit holders). All new permit amendments for Edwards wells are designated as “Conditional” Permits, which means they are subject to 100% curtailment during extreme drought.

Transport Permits – These permits are required to authorize the transport of groundwater out of the District. A Transport Permit may only authorize the transport of water permitted under an approved production permit.

- GUY RIALS, REGULATORY COMPLIANCE SPECIALIST

DISTRICT CALENDAR

The Board of Directors usually meets on the 2nd and 4th Thursdays of the month (beginning at 6 pm) at the District’s office at 1124 Regal Row, Austin, TX 78748. However, the meeting schedule and location are subject to change. The agenda for posted meetings can be found on the District website at www.bseacd.org. Please contact the District office at 512-282-8441 with any questions.

Jan. 13 & 27   Board meetings
Jan. 17        Office closed for Martin Luther King Day
Feb. 10 & 24   Board meetings
Feb. 21        Office closed for Presidents’ Day
Mar. 5         Austin Cave Festival at the Village of Western Oaks Karst Preserve
Mar. 7 - 11    National Groundwater Awareness Week
Mar. 10 & 24   Board meetings
Mar. 22        Central Texas Water Conservation Symposium
Apr. 14 & 28   Board meetings
It is traditional – some might call it trite – for columnists to have an end-of-the year retrospective that revisits those momentous things that occurred over the preceding twelve months. I won't do that here. But it's not because I refuse to write such a column. No, it's primarily because, for a change, there wasn't all that much momentous that occurred in 2010 for the District. But that is not to say that nothing important took place. So you traditionalists will undoubtedly be pleased to see this retrospective.

Perhaps the most notable thing is what didn’t occur. That is groundwater drought. For the first time in many years, there was no District-declared drought at any time in 2010, thanks to the rains in the fall of 2009 that had the Barton Springs aquifer brim-full as we went in to 2010, and also to some well-timed and -spaced rain events throughout 2010, at least until recently. Even in the summer months, when the highest demand on our aquifers typically occurs, we were blessed with some beneficial rains that served as lawn irrigation. We thank those end-users who recognized that there wasn't the need to run their automatic sprinklers as much, even on “their watering day,” and conserved the groundwater resource for use when it is really needed. And we encourage everyone to emulate that behavior with their own systems, drought or no-drought.

The District installed another state-of-the-art, multi-port monitoring well for scientific analysis of the characteristics of and relationship between the Edwards and the underlying Trinity Aquifers. This well, near the boundary between the recharge zone and the artesian zone of the Edwards just west of Buda, provides new information to us on the lateral and vertical continuity of certain hydrogeologic units, and is part of a network of wells that can relate fine details of the geology and hydrology in an area that typifies the heaviest-used part of the Edwards Aquifer. There is more about this new well on page 6 in this newsletter.

Various elections were important for the District in 2010. First, the two incumbent directors whose four-year terms ended in 2010, Craig Smith and Gary Franklin, were re-elected in May, with Director Franklin winning a contested director’s seat, the first contested race for the District in almost a decade. Then, in June, the Board elected new officers, with Mary Stone becoming President, Gary Franklin Vice-President, and Craig Smith Secretary. The November general elections produced numerous changes in the public officials that share jurisdictions with us and with whom we work throughout the year on issues of common import. We look forward to working constructively with the new members of the Hays County Commissioners Court, including the new County Judge Bert Cobb and two new Commissioners, Mark Jones and Ray Whisenant, and also with the two new state representatives, Jason Isaac in Hays and Caldwell Counties and Paul Workman in western Travis County. At the same time, we will miss those public servants with whom we have developed close relationships over the years and who have supported work in areas of mutual interest: Judge Liz Sumter and Commissioners Jeff Barton and Karen Ford in Hays County, and Representative Valinda Bolton for Travis County and Representative Patrick Rose for Hays and Caldwell Counties – we thank them for their service and wish them well in their future endeavors.

The District took a leadership role in both GMA 9 and GMA 10 in establishing, as mandated by statute, the Desired Future Conditions for the aquifers in the District. The adopted “DFCs” will be translated by the Texas Water Development Board into the permitted pumping limits specified by the Managed Available Groundwater amounts for each aquifer or aquifer subdivision. These MAGs are expected shortly after the first of the year. We are already considering how the adopted DFCs might be revised in the second round, even though those revisions might be several years off.

In the late summer, District hydrogeologists, in concert with fellow geoscientists in Hays-Trinity GCD and Blanco-Pedernales GCD and in association with several other supporting organizations, published a ground-breaking "Hydrogeologic Atlas of the Hill Country Trinity Aquifer, Central Texas." This folio-type publication, available in limited print edition but also widely distributed on DVD, has been in preparation for over two years and includes original geologic analysis and interpretation along with an unsurpassed compendium of existing information and maps. It is rightfully considered the definitive work on this aquifer system, which underlies the Edwards Aquifer in the District. You can read more about the Atlas on page 9 of this newsletter.

There were many other accomplishments in 2010 that I will simply mention “for the record”: completion of the 319(h) grant project concerning enhancements to a major recharge facility; substantial progress on the District’s long-running Habitat Conservation Plan (HCP) for the Barton Springs salamander; initiation of what is turning out to be an omnibus rule-making in anticipation of establishing both the MAGs and likely HCP measures; numerous environmental educational and outreach initiatives for all ages, by which the District continues to be recognized as a leader in karst groundwater-related education; preparation of proposals for grant funding of a feasibility study and pilot program for desalination in the saline Edwards Aquifer in the eastern part of the District; providing comments and testimony on legislative interim charges and on sunset reviews; supporting the District’s interpretation of its permitting rules in evidentiary hearings; participation in the evidentiary hearing process for the TCEQ recommendations for GCDs in the Hill Country Priority Groundwater Management Area; and development of the District’s legislative agenda to assist us in both managing the District’s groundwater resources efficiently and enabling use of alternative water supplies.

Whew! Maybe it was a momentous year after all! Taking a look ahead, in addition to the usual ongoing activities of a GCD, the District will have a fairly ambitious set of bills that it will seek to pass in the upcoming legislative session, the re-districting and state budgeting demands notwithstanding. We should be completing our HCP grant project next year, although the HCP itself and the Incidental Take Permit may still be one or two years further off. We will also be revising and implementing any Management Plan changes required by the provisions of our applicable MAGs and demonstrating compliance with the DFCs. Finally, we will keep an eye on the sky and on our drought indicators – aquifer water levels are falling and if that continues, we may be approaching groundwater drought conditions about the time summer-month demands start picking up. So, please use your groundwater supplies wisely.

- KIRK HOLLAND, GM
peak in late spring and were beginning their natural seasonal decline, Tropical Storm Alex struck in June and brought above-average rainfall for the month. Alex originated in the Caribbean and was the first tropical cyclone to form in the 2010 Atlantic Hurricane season; it made landfall just south of Texas and proceeded into Mexico and then into Texas. The storm brought up to 6 inches of rain in Central Texas. Alex was followed by a tropical depression in July that produced a couple of inches of rainfall.

August turned out to be one of the hottest and driest months on record, but then in September Tropical Storm Hermine produced up to 10 inches of rain, which was one of the wettest Septembers on record for the region. These three, well-spaced tropical systems helped provide significant rainfall and creekflow, resulting in rises in groundwater levels and springflow for the Barton Springs segment of the Edwards Aquifer (Figure 2).

Tropical Storm Hermine

The most significant rainfall totals were associated with Tropical Storm Hermine. This storm originated off the coast of Mexico and quickly strengthened before making landfall in Mexico just south of Texas on September 7, 2010. Hermine remained a well-organized storm system and brought a lot of rain and flooding to Texas as the eye of the storm finally dissipated in Central Texas. As a result, Central Texas received a remarkable amount of rainfall, (Figures 3 and 4) with 15.6 inches reported from Georgetown and 11.5 inches reported for Austin. Locally, the District recorded about 10 inches (Figure 1).

Significant rainfall from Hermine generated runoff and caused flooding in both the contributing and recharge zones of the Edwards Aquifer (Figures 5 and 6). Peak streamflow in the creeks was orders of magnitude greater than rises caused by Hurricane Alex, and the duration of flow was also much greater for Hermine than Alex. Enough runoff was generated to sustain flow in the larger watersheds (Blanco and Onion) for several weeks; at the time of this newsletter, the Blanco River continues to flow across the entire recharge zone. However, most creeks that contribute recharge to the Barton Springs Aquifer are now dry, with Onion Creek only flowing a minor amount at the upstream portion of the recharge zone. However, despite having significantly more water flowing in the creeks, water levels in the aquifer did not rise above their early summer levels (Figure 2) and are currently leveling off or declining. Barton Springs flow reached its highest sustained discharge following Hermine, but has been steadily declining after Hermine (Figure 2).

The recharge that occurred will sustain water levels for the next few months, and has effectively reset and delayed the starting point of the natural decline of groundwater levels and springflow that had initially started in August.

The nature of this karst aquifer is to respond to climatic events and stresses quickly, and indeed the response to a hot August followed by a wet September illustrates that fact. The longer-term impacts of Hermine coupled with the effects of the La Niña weather pattern will be more apparent in future months.

- BRIAN HUNT AND BRIAN SMITH, SENIOR HYDROGEOLOGISTS
Aquifer Status
(continued from page 4)

Figure 4. Map of Central Texas showing rainfall totals from Tropical Storm Hermine. The redder colors indicate rainfall >5 inches with most in the Barton Springs contributing and recharge zones totaling 6 to 8 inches. The District office received about 10 inches of rainfall. Base map source: LCRA Hydromet, map generated September 8, 2010 9:00 am. Location of the recharge zone for the Barton Springs segment of the Edwards Aquifer is approximate.

Figure 5. Many low-water crossings were flooded by the rainfall from Hermine. This photo is of a low-water crossing of Slaughter Creek just west of Brodie Lane. You can see the high-water mark on the road near the top of the photo. Photo taken September 8, 10:00 am.

Figure 6. Flooding in Barton Creek brought floodwaters into Barton Springs Pool. This photo was taken September 8, 2010 at about 12:00 pm.
On Saturday, October 9, 2010, the District, together with Hays County, Rocco Media, Wimberley Valley Watershed Association, HEB, Lakota Water Company and many other sponsors hosted the first annual Rainwater Revival in Dripping Springs. More than 45 booths were there, all with one message: collect rainwater to supplement or replace your current supply. Many of the booths were rainwater system installers and well drilling companies. Representatives of companies from as far away as Comfort, native plant growers from Austin and Oak Hill, and banks and lenders in the area — talking about financing for larger rainwater systems — were involved. Groundwater districts, the City of Dripping Springs, non-profits, and for-profits were all there to discuss the whys and hows of rainwater collecting.

The District’s emphasis was on the small systems — simple, inexpensive and a great way to encourage folks to start collecting rainwater (Fig. 7). Our simple system using a trashcan, a faucet, and some gaskets was well received (for instructions see page 10 of this newsletter); we had lots of folks asking questions about parts, cost, and installation.

We also constructed a small ‘dog–house” version of rainwater capture using gutters. As a hands-on demonstration it was a tremendous hit with the kids, as they could fill a beaker from the rainwater collection can, and pour water into the gutter and watch the water runoff and run into our catchment beaker. Grabbing the attention of the kids brought lots of parents our way.

The single biggest concern voiced was cost of rainwater systems. By educating and encouraging folks to begin small and simple, they begin to develop a sense of the value of capturing rainwater for use around the home. From a simple start, the seed is planted.

A fair number of visitors to our booth are on wells (especially Trinity wells), and many lost water during the drought. These folks in particular were interested or already were doing some type of rainwater harvesting. Many others who stopped by our booth were also very interested in our map of the Barton Springs segment of the aquifer, locating their homes and ranches out in the contributing zone and inquiring about the supply of water and its abundance and their situations without water in the past.

My impression as an educator was that this event was very well received for a first year effort. I can see this growing into an annual event.

JULIE JENKINS, ENVIRONMENTAL EDUCATOR

New Monitor Well Installed

During this past summer, a Westbay multiport monitor well was installed near the District’s Antioch Cave facility west of Buda. This well is similar to the multiport well the District installed in 2008 adjacent to Ruby Ranch about 3 miles west of Antioch because it will allow for multilevel monitoring of the Edwards and Trinity Aquifers. The well at Antioch was constructed with 21 monitor zones, 7 zones in the Edwards and 14 zones in the Upper and Middle Trinity Aquifers. The total depth of the well is 1,375 ft.

BRIAN HUNT AND BRIAN SMITH, SENIOR HYDROGEOLOGISTS
**Teachers and Educators**

**Groundwater to the Gulf:**
Summer Institute for Central Texas Educators

This 3-day, field-trip based institute emphasizes techniques for teaching water-based curricula to students in grades 4 through 8. Participants will follow the path of water in Central Texas from its origins to its final destination in the Gulf of Mexico. Visit local field sites and learn about groundwater, river systems, and bays and estuaries with local experts.

Educators earn 22 continuing education credits.

FREE for educators.

Registration opens: **Mar. 1, 2011**.
For more information visit: [http://www.bseacd.org/events/g2g](http://www.bseacd.org/events/g2g)

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**High School Students (11th and 12th grade)**

**2011 College Scholarship Essay Contest**

One essay will be selected as the winning entry by an independent evaluation panel, and the author will receive a $1,500 scholarship to the college, community college, or training institution of his/her choice. Essays must discuss groundwater issues and applicants must reside in one of the seven school districts overlapping the District boundary. Students attending public, private, or home schools are welcome to apply. The seven independent school districts are: Austin, Eanes, Dripping Springs, Hays Consolidated, Del Valle, Bastrop, and Lockhart.

Deadline for submissions: **5:00pm, Friday, Mar. 11, 2011**.
For complete details visit: [http://www.bseacd.org/events/scholarships](http://www.bseacd.org/events/scholarships)

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**Elementary and Middle School Students (ages 9-15)**

**2011 Aquatic Sciences Camp Scholarships Essay/Artwork Contest**

The Camp scholarship contest is open to children ages 9 through 15 who reside in one of the seven school districts within the District’s boundaries. Students attending public, private, or home schools are welcome to apply. These seven independent school districts are: Austin, Eanes, Dripping Springs, Hays Consolidated, Del Valle, Bastrop, and Lockhart.

Interested students must submit an application and a 1-page essay/artwork entitled "Why I want to attend the Aquatic Science Adventure Camp!" Scholarship winners will be chosen in a random drawing; only completed applications with essays will be eligible.

Deadline for submissions: **5:00pm, Friday, Apr. 1, 2011**.
For complete details visit: [http://www.bseacd.org/events/scholarships](http://www.bseacd.org/events/scholarships)

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**Families and General Public**

**2011 Austin Cave Festival Village of Western Oaks Karst Preserve**

Each year, the District and the Texas Cave Management Association hold the Austin Cave Festival at the Village of Western Oaks Karst Preserve to educate local residents about the importance and sensitivity of the aquifer and its recharge features. The festival includes short cave trips in Get Down and Live Oak Caves, vertical ropes courses, flintknapping demonstrations, hands-on activities for children, prizes, and storytimes. Booth presenters from local organizations provide valuable conservation information and resources. This year’s cave festival will be during Groundwater Awareness Week, **Saturday, March 5, 2011 from 9-3**.

For more information visit: [http://www.bseacd.org/events/austin_cave_festival](http://www.bseacd.org/events/austin_cave_festival)
Website Updates:

Records Update:
Open Government is Accountable
Government: The District Response

![District Records webpage with links to agendas, minutes, and financial reports](www.bseacd.org/reports)

Government should be transparent. Transparency promotes accountability and provides information for citizens on what their government is doing and how it is doing it. Transparency requires both access to information and the context around how it was created and for what purpose so that it will be usable if and when needed by citizens.

The District recognizes that government financial data are fundamentally a public resource, and in support of Transparency in Government, the District is now providing updated financial reports on the District website (Fig. 11). In addition to our annual budget and subsequent budget revisions, the District will be posting monthly Income Statements (Profit & Loss Reports), Balance Sheet Reports, and Transaction Detail by Accounts Reports that show all expenditures and monies received and deposited. These reports can be found on our website under Records, Financial Reports, Current or Archived. The information for the most recent completed month will be included in the Current Reports page; older information will be in the Archived Reports pages.

Open Government is not a new thing and may have been proposed from the top down, but it must be built and implemented from the bottom up. The District is striving to provide the transparency needed by its constituents. Let us know if what we are doing is or isn’t meeting your needs, by contacting the District by phone at 512.282.8441 or by email at feedback@bseacd.org.

- DANA CHRISTINE WILSON,
ADMINISTRATION MANAGER

Regulatory Update:
New Meter Reading Reporting Method

ATTENTION PERMITTEES:
All meter readings submitted via e-mail shall now be sent to the following email address:

meterreadings@bseacd.org

This was created to provide a single inbox for all meter readings where previously they were going to multiple destinations. If you don’t submit via email already, we strongly encourage you to do so for the convenience of both you and District staff. A reply email will be sent acknowledging our receipt of your information.

Records Available On-Line
- Agendas and Backup
- Current Financial Reports
- Current Budget
- Archived Financial Reports
- Archived Budgets
- Annual Report and Annual Financial Audit
The Saga of the Hill Country PGMA: The Plot Thickens

The fate of these unprotected areas – including southwestern Travis County adjacent to BSEACD – is anybody’s guess at this point, with the story taking as many plot twists and turns as a “whodunit” novel. After these areas were designated as areas in need of groundwater management, the issue remained relatively dormant, until recently. Meanwhile, the residents in these areas who were experiencing well problems, especially during droughts, became increasingly frustrated by the lack of attention to this situation. In the 2009 legislative session, the District attempted to answer the call by supporting bills filed by Sen. Kirk Watson and Rep. Valinda Bolton that would have allowed the residents of southwestern Travis County to vote to be annexed (or not) into the BSEACD’s jurisdiction. At the time, the BSEACD was agreeable to the annexation idea because of the limited alternative options available for GCD creation, and in fact had established a Trinity Aquifer-specific management zone. The bills, however, failed to pass.

Since then, the TCEQ has issued a long-awaited report that recommended a regional multi-county GCD be created to include western Comal County, southwestern Travis County, and the area currently within the existing Hays Trinity GCD, which TCEQ considered as unable to offer effective groundwater management on a sustained basis. This recommendation was aligned with the clear legislative intent that new GCDs are preferably multi-county GCDs so that they can focus on integrated local management of an aquifer system, which of course does not conform to county line boundaries; many GCDs in the state are multi-county, including BSEACD. At the time the final report was being drafted, this multi-county recommendation for the Hill Country PGMA was widely supported by all of the area governments, including the then-Board of the Hays Trinity GCD. In another plot twist, the Hays Trinity GCD experienced a changing of the guard with a majority of the previous Directors being replaced in recent elections. A quorum of the new Board then flipped the GCD’s previous position by opposing the multi-county district, insisting on “more local” control. In response, the TCEQ also flipped their recommendation in favor of annexation of southwestern Travis County by the BSEACD – the same option that has already once failed to be approved by the legislature. To make things even more interesting, the Travis County Commissioners Court has recently imposed a moratorium on new subdivisions relying on Trinity Aquifer wells, to provide time for a GCD to be in place. More public and evidentiary hearings on the TCEQ’s recently revised position are scheduled to be held and as always, the legislature could weigh-in during the upcoming session before TCEQ is scheduled to order a resolution to this puzzle.

One way or the other, these areas in this PGMA will have to be managed by some form of GCD(s) that can provide effective groundwater management. How GCD creation happens and what form it will take remains a mystery. But stay tuned. If the story continues at this pace, more plot twists await and it will definitely be worth watching.

- JOHN DUPNIK, SENIOR REGULATORY COMPLIANCE SPECIALIST

The BSEACD was one of many sponsors, and its staff contributors, of a science-based, public-service document recently published. The effort was spearheaded by three groundwater conservation districts, numerous volunteers, agencies, and foundations. The document consists of 19 plates that cover a range of geologic information and hydrogeologic information about the Hill Country Trinity Aquifer in parts of Hays, Blanco, and Travis Counties, and extends into the BSEACD. The University of Texas has put the document in their Digital Repository and is located at the following link: http://repositories.lib.utexas.edu/handle/2152/8977

Recent Publication: Hydrogeologic Atlas of the Hill Country Aquifer, Blanco, Hays and Travis Counties, Central Texas

![Figure 12. The Hill Country Priority Groundwater Management Area and associated counties.](Image)

Barton Springs/Edwards Aquifer Conservation District 1124 Regal Row, Austin, Texas 78748 www.bseacd.org (512) 282-8441 bseacd@bseacd.org

PAGE 9
Get Ready for Spring: Build Your Own Rain Barrel

Ever notice how happy plants are after it rains? Rainwater is free of the chemicals we use to treat water to make it suitable for drinking. Using rainwater can help reduce your water bills, and the plants love the pure rainwater. Why not capture it to use when it’s not raining? Here are instructions for a low-cost, homemade rain barrel.

![Figure 12. A) A common, heavy-duty garbage can; B) Preparing the lid; C) Preparing the faucet assembly; D) Completed rain barrel.](image)

**Parts list (store department)**

1. heavy duty trash can with well-fitting lid (garden)
2. ½ inch faucet (plumbing)
3. ½ inch plastic washer (hardware)
4. ½ inch conduit locknut (electrical)
   - Silicone-Kitchen/Bath/Plumbing (paint)
   - PVC glue (PVC) or liquid nails (paint)
   - Window screen (doors & windows)

**Tools**

- Utility knife with sharp blade
- Drill
- Drill bit slightly smaller than faucet diameter
- Wrench

**Instructions**

1. Use a large plastic garbage can or plastic barrel with a well-fitting lid (Fig. 12-A).
2. Cut a hole 12 inches in diameter in the lid using a utility knife with a sharp blade. Attach a fine screen over the hole in the lid with PVC glue. This will help filter out debris and keep mosquitoes out (Fig. 12-B).
3. Drill a small hole near the base of the barrel. Be careful to test the size of the drill bit, so that the faucet will fit through the hole snugly.
4. Insert the faucet into the hole near the base of the barrel. Place a rubber washer over the faucet threads from the inside of the barrel. Slide a metal washer directly behind the rubber washer, and place a locknut behind the metal washer (Fig. 12-C). Tighten faucet assembly. If necessary apply a bead of silicone inside and outside before tightening.
5. Position the rain barrel under a downspout from the roof. Elevate the barrel using cinder blocks or other sturdy base. Attach a hose to the faucet or fill a watering can to begin watering your garden with rainwater (Fig. 12-D).

Adapted from ‘How to Collect Rainwater’, Lady Bird Johnson Wildflower Center Native Plants, Fall 2005