



**Barton Springs
Edwards Aquifer**
CONSERVATION DISTRICT



AQUIFER UPDATE

September 2011

Stage III Critical Drought Declared

With hot temperatures, no rain, and no creekflow (Fig. 1), water levels in the area aquifers continue to decline. The District's drought triggers, the Lovelady Monitor Well and Barton Springs, crossed their respective thresholds for Stage III Critical Drought in early September and the District Board declared Stage III Critical drought on September 8, 2011.



Figure 1: No water in Onion Creek on the upstream edge of the Recharge Zone.

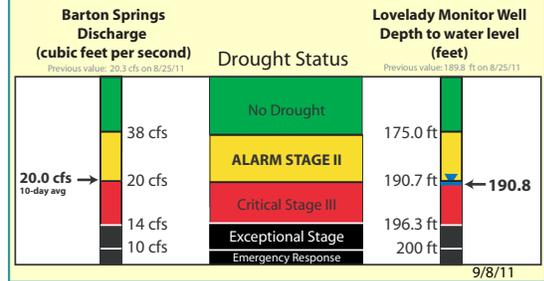
The increase in drought stage means more watering restrictions are in effect. The restrictions limit water use and help slow water level decline thereby protecting springflow and water supplies for the 60,000+ groundwater users in the District.

The District asks all of its groundwater-using residents to continue their water conservation measures and be even better stewards of an increasingly scarce resource. A list of water conservation measures and more detailed information on aquifer conditions are available on the

District's website at www.bseacd.org. The aquifer can no longer afford anything other than minimal use, and that may be the situation for many, many more months.

Groundwater is a shared resource, so conservation has to be a coordinated effort. Please help us spread the word- **-CONSERVE.**

DROUGHT STATUS



District Overview

Barton Springs/Edwards Aquifer Conservation District is the groundwater conservation district established to conserve, protect, and enhance the groundwater resources of the Barton Springs segment of the Edwards Aquifer and the underlying Trinity Aquifer.

The District boundary encompasses approximately 247 square miles in Caldwell, Hays, and Travis counties. The area has a long history of farming, ranching, and rural domestic use of groundwater, but it is increasingly and rapidly being converted to residential use owing to suburban and exurban development from Austin and San Marcos.

The use of groundwater in the segment has grown over the last 75 years from just incidental amounts to now serving as either a sole source or a primary source of drinking water of 60,000+ people. It also is the source of water for Barton Springs Pool in Austin's Zilker Park, and its associated spring-dependent species.

Report Well Problems

To better understand aquifer dynamics and to equitably manage the groundwater resources within the District during severe drought conditions, we are compiling information on well issues.

From 2008-2009, during Stage III Critical Drought, the District received multiple 'dry well' reports caused by poor pump placement, water level decline, or water level drawdown in areas with a high density of wells (see 'Impacts to Wells During Drought' article on the next page). This is a serious issue in the District, because there are a large number of residents

who rely on groundwater as their primary source of drinking water.

Please help us track water availability by filling out the Well Problem Report Form online or by email, mail, or phone.

For more information visit: www.bseacd.org/aquifer-science/aquifer-data/

TOP 5 WATER SAVING TIPS

1. TURN OFF YOUR IRRIGATION SYSTEM.

Limit outdoor watering to soaker hoses & hand watering that target high-value trees and shrubs so you won't lose what comprises the backbone of your landscape. Pay close attention to your monthly water budget; most water utilities allow 3,000 gallons per person per month--that includes outdoor water use.

2. MAKE WATER CONSERVATION A WHOLE FAMILY ACTIVITY.

Challenge all your family members to think of new ways to save water and to be part of the solution.

3. CATCH THE CONDENSATION FROM YOUR AC UNIT AND USE IT IN YOUR YARD.

Depending on how your air conditioner is programmed, it can produce gallons of water per day. Catch that water in a bucket or rain barrel and put it on your garden, shrubs and trees.

4. FIX LEAKY FAUCETS AND TOILETS.

Leaky faucets can waste up to 7 gallons of water per day and leaky toilets can waste even more. To check for leaks at home, read your water meter and avoid using water for 2 hours. Read the meter again after this period. If the amount is different, you have a leak.

5. ONLY RUN THE DISHWASHER OR WASHING MACHINE WITH A FULL LOAD.

And if it is time to replace either of these appliances, opt for water-conserving models.

For more water conserving ideas for inside and outside your house, information on rainwater harvesting, and water wise landscaping, visit:

www.bseacd.org/conservation/



Have a great water conservation solution? Share it on our Facebook page! 'Like' us to keep up with the latest events, news, and drought updates.

Impacts to Wells During Drought

Besides the obvious impact to springflow, high levels of pumping during drought also result in negative impacts to wells. Under similar drought conditions in 2009, we documented several wells that "went dry", and pump installers told us that they were very busy lowering pumps within wells.

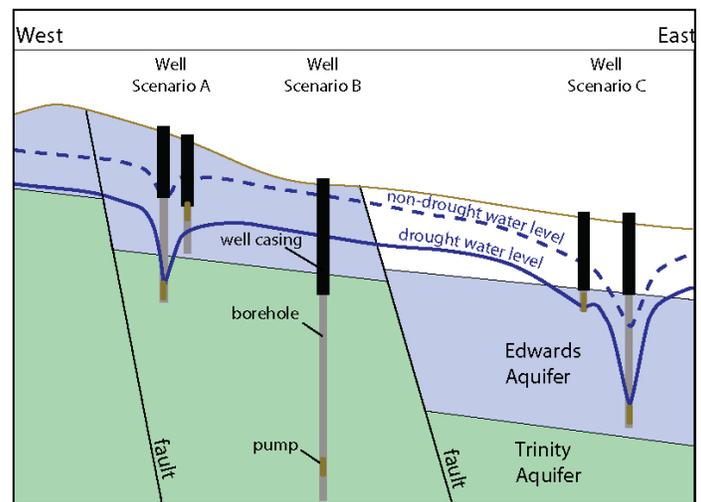
Groundwater pumping limitations on water suppliers and businesses effectively reduce the stress on the aquifer. End-users served by water suppliers using groundwater in the District are under watering restrictions because the amount of water the supply company can access is greatly reduced. Conserving water and reducing water use is essential to protect this shared resource--whether you're a business, residential customer, or well owner.

Figure 2 is a conceptualized cross section of the aquifer highlighting some of the well and water level issues this drought has produced. In addition to a coordinated conservation effort, in some cases the solution to a dry well is to lower the pump or drill the well deeper.

Scenario A :

Issue: Although one of the wells slightly penetrates into the Trinity Aquifer, most of the water is derived from the Edwards. This is in fact the case with many wells in the District that are west of FM 1626. Therefore, pumping from nearby wells further lowers the water table in a drought and can contribute to wells going dry.

Solution: Reduce pumping in the region, and in some cases, drill wells deeper into the Trinity Aquifer; however the Trinity Aquifer is also a finite resource and similarly impacted by drought and pumping.



not to scale

Figure 2: Conceptual cross-section of the Edwards and Trinity aquifers, wells, and water levels.

Scenario B :

Issue: This well is truly a Trinity well and pumping from this well has minimal impact on wells in the Edwards Aquifer, but pumping could affect nearby Trinity wells. These wells typically are 800 feet or more in depth (west of FM 1626) and the Edwards Aquifer is completely cased off.

Scenario C :

Issue: Many wells were drilled decades ago when there was less pumping and the drilling technology was such that many wells only penetrate the top of the aquifer. Drought and increasing pumping from wells can lower the water level such that these shallow wells effectively go dry.

Solution: In this situation the remedy is to drill a deeper well to encounter more of the aquifer.

The common theme to all these scenarios is that we are seeing wells go dry for a myriad of reasons that involve the drought, increased pumping, aquifer properties, and well configurations. Please report any well-yield or water-quality problems related to this drought to Brian Hunt, Senior Hydrogeologist (brianh@bseacd.org) or use the online Well Problem Report form.