

## **YOU DON'T MISS IT UNTIL IT'S GONE: DROUGHT HIGHLIGHTS THE IMPORTANCE OF WATER MANAGEMENT**

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Drought conditions in Texas throughout 2011 adversely impacted Texas's economy and environment. Georgia is facing drought conditions again this year, following the shortages of 2008. As the economic and environmental impacts of water shortage continue, these regions share the results, but local responses differ.

### **Central and Western Texas**

Rainfall in early 2012 helped Texas recover from water deficits in 2011, but not enough. For example, average yearly rainfall in Odessa, northwest of San Antonio, is about 14.22 inches. Lyxan Toledanes, *City Adjusts Water Use for New Restrictions* (Feb. 26, 2012), <http://www.oaoa.com/news/water-82687-restrictions-city.html>. In 2011 the area only received 5.47 inches of rainfall and by mid-April 2012 had only received 1.35 inches of rain, well below the 2.21-inch normal level. *Drought Information Statement*, NOAA (Apr. 17, 2012), <http://www.srh.noaa.gov/productview.php?pil=DGTMAF>.

El Paso, which relies on the Rio Grande to supply about 50 percent of its utilities, is usually allotted 60,000 acre-feet of water each year. But because of the 2012 drought, El Paso will only receive 20,000 to 25,000 acre-feet of water according to a spokesperson for El Paso's water utility. *Drought in El Paso County*, EL PASO TIMES (Apr. 6, 2012). Similar reductions face the Highland Lakes along the Colorado River that supply water to most of Austin. The Lower Colorado River Authority (LCRA) reports that last year the water supply in the Highland Lakes (lakes Travis and Buchanan) fell to their third lowest storage level in history and are about 48 percent full, containing about 960,000 acre-feet of water. LCRA,

<http://www.lcra.org/water/drought/index.html>. Due to low reservoir levels, the LCRA will not provide water from those lakes to many downstream farmers this year. *Id.* The effects of low rainfall and below-average snowpack combined with increased municipal and farming demand have impacted the distribution of water throughout western Texas.

The drought has also caused tensions between Texas and Mexico. According to a 1906 convention, the United States "shall deliver to Mexico a total of 60,000 acre-feet of water annually in the bed of the Rio Grande" at a location near El Paso, Texas, and Juarez, Mexico. Convention Between the United States and Mexico, Equitable Distribution of the Waters of the Rio Grande, art. I (May 21, 1906), [http://www.ibwc.state.gov/Treaties\\_Minutes/treaties.html](http://www.ibwc.state.gov/Treaties_Minutes/treaties.html). But this allocation may be reduced in the event of "extraordinary drought," in which case the amount delivered to Mexico may be reduced in proportion to the reduction of water supplied to irrigation systems in the United States. *Id.* at art. II. Because of the drought's impact and resulting pro-rata reduction, Mexico received only about 12,275 acre-feet this year—about one-fifth of the allocation—from the Rio Grande this year. Minutes of the Rio Grande Citizens Forum, Int'l Boundary & Water Comm'n (Apr. 19, 2012).

### **Georgia and the Southeast**

Georgia and other parts of the Southeast are also experiencing debilitating drought in 2012. *See, e.g., Drought Taking Toll on Parts of Georgia*, ASSOCIATED PRESS, Apr. 17, 2012. Outside of Atlanta, Thurmond Lake's average pool in April was 5.6 feet lower than at the same time in 2011. *Id.* Inflows into Lake Lanier, which provides more than a third of Atlanta's water, were 57 percent of normal inflows. *ACF Drought Update*, U.S. ARMY CORPS OF ENG'RS (May 22, 2012), <http://water.sam.usace.army.mil/ACFDroughtUpdate.pdf>.

Drought conditions in Georgia are beginning to have adverse economic and environmental effects as competition among water users increases. Conflicting interests for municipal, agricultural, and environmental use on the water supply from the Flint, Apalachicola, and Chattahoochee rivers exist throughout the Southeast. *Our Opinion: No More Water Wars*, TALLAHASSEE DEMOCRAT, May 11, 2012. Georgia wants to use the water from Lake Lanier to supply the millions of Atlanta residents and businesses. *Id.* Downstream, farmers in southern Georgia and Alabama need water for crop production. *Id.* The U.S. Army Corps of Engineers has restricted flow into the Apalachicola River to protect threatened and endangered species from the devastating effects of a severe drought. *See, e.g.*, Ellen Reinhardt, *Drought Hurting Georgia Fish Hatcheries*, GPB NEWS (Apr. 16, 2012), <http://www.gpb.org/news/2012/04/16/drought-hurting-georgia-fish-hatcheries>.

In sum, the droughts in both Texas and Georgia are severe and continue to impact local economies and environments. In particular, the lasting drought has affected Texas, where some ranchers have been forced to sell their cattle herds because they no longer have grass or water to sustain their population. LCRA, <http://www.lcra.org/water/drought/index.html>. Other ranchers are now moving their cattle to surrounding states to prevent selling their source of income. *Id.*

## Approaches to the Problem

Responses to water shortage have been varied and tentative. A typical response is to restrict water use and so reserve it for other, specific needs. More forward-looking responses, however, involve water conservation and better water harvesting.

Texas cities remain under tight water restrictions, trying to stave off some of the negative effects of the drought. Typical of some of these restrictions, the Stage 2 restrictions imposed by Austin (1) limit “watering with an irrigation system, hose-end sprinkler, or soaker hose” to one day per week based on address; (2) limit automatic irrigation system use to before 10 a.m. on the resident’s assigned day; (3) limit washing cars and using hose-end sprinklers and soaker hoses to before 10 a.m. and after 7 p.m. on the assigned day;

(4) prohibit “ornamental fountains” and automatic fill valves on swimming pools and ponds; (5) prohibit water being served at restaurants unless requested; (6) prohibit washing sidewalks, driveways, and parking areas; and (7) prohibit charity carwashes. *Stage 2 Watering Restrictions Still in Effect*, AUSTIN WATER, <http://www.austintexas.gov/department/stage-2-watering-restrictions> (last visited August 7, 2012). Austin’s Stage 2 restrictions had been in effect since September 6, 2011, but due to slight improvements in conditions, the city eased those restrictions on July 16, 2012. *Id.* In May 2012, Austin city officials proposed new water restriction rules in order to conserve water over time. Marty Toohey, *Austin Utility Proposes New Rules for Watering*, AUSTIN-AM. STATESMAN, May 12, 2012. The new rules allow use of drip irrigation, which is more efficient and wastes less water than traditional sprinkler systems.

Some of Georgia’s restrictions intend to conserve water and to reduce the impacts of municipal and industrial use on those downstream. *See* Ga. Dep’t of Natural Res., *Outdoor Water Use Schedules and Restrictions*, EPD, [http://www.gaepd.org/Documents/water\\_use\\_schedules.html](http://www.gaepd.org/Documents/water_use_schedules.html) (last visited August 7, 2012). Currently, the nondrought schedule allows for outdoor water use three days per week. On the assigned days, landscape watering may not take place between 10 a.m. and 4 p.m.

Water users, including farmers and ranchers, routinely rely on both surface and groundwater to supply their needs. A decrease in one source almost requires a switch to the other. In Texas, LCRA has been withholding water from the Colorado River via the Highland Lakes from farmers downstream in order to preserve the water for municipal and residential use in the Austin area. This solution may put pressure on another rapidly depleting resource, the Edwards Aquifer. Shortages in groundwater supply have resulted in the formation of a series of groundwater management districts and local conservation districts cropping up to monitor and, in some cases, regulate the use of groundwater for that area. However, a recent Texas Supreme Court decision compared the ownership of groundwater to the ownership of oil and gas in place and recognized the landowner’s right to

that absolute ownership. *Edwards Aquifer Auth. v. McDaniel*, No. 08-0964, 2012 Tex. LEXIS 161, at \*45, \*77–78 (Tex. Feb. 24, 2012) (finding that the landowner had a compensable interest in groundwater and remanding to trial court to decide if restricting groundwater use amounts to a regulatory taking). This decision may make it difficult to regulate the use and withdrawal of groundwater from the aquifers. Thus, while withholding surface water may temper the problem upstream, depending on the outcome of the trial court decision, the downstream farmers may rely primarily on groundwater, further exacerbating the pressing problem of diminished groundwater.

Atlanta's Clean Water Atlanta Program, adopted in response to sewer overflows, uses higher water/sewer rates as incentives for water conservation. *See Water and Sewer Rate Information*, ATLANTA WATERSHED DEP'T, [http://www.atlantawatershed.org/custsrv/water\\_and\\_sewer\\_rates.htm](http://www.atlantawatershed.org/custsrv/water_and_sewer_rates.htm) (last visited August 7, 2012). These measures, coupled with rebates for citizens and businesses that use rainwater harvesting technology like those available in Austin, could aid Atlanta's recovery from the devastating drought.

An efficient and positive solution to reduce the harm of future droughts is to improve efforts to harvest and store the limited rainfall. Texas provides statewide tax incentives to encourage citizens to adopt rainwater harvesting technology, and San Antonio and Austin provide additional incentives and rebates to their citizens. TEX. TAX CODE ANN. § 151.355 (West 2011); TEX. WATER DEV. BD., TEXAS MANUAL ON RAINWATER HARVESTING 3, 54 (2005). An Austin program encourages citizens and businesses to adopt rainwater harvesting technology. *See, e.g., Rainwater Rebates*, AUSTIN WATER, <http://www.austintexas.gov/departments/rainwater-harvesting-rebates> (last visited August 7, 2012).

Programs that limit stormwater runoff have the added benefit of slowing the discharge of surface water, thus allowing the recharge of groundwater. When precipitation is not directed across and through impervious surfaces into traditional storm drains but, instead, is allowed to slowly infiltrate into the soil, the

water may eventually find its way into the groundwater aquifer. *See, e.g., LOS ANGELES AND SAN GABRIEL RIVERS WATERSHED COUNCIL, WATER AUGMENTATION STUDY* (2010), <http://www.usbr.gov/lc/socal/reports/LASGwtraugmentation/report.pdf>.

Some cities encourage the implementation of stormwater controls by taxing residents and businesses based on the amount of impervious surfaces. For example, to promote water conservation and to mitigate stormwater runoff, San Antonio implemented stormwater fees: \$3.22 per month charged to residents that have up to 4,999 square feet of impervious surface area while residents with 5,000 square feet or more are charged \$4.25 per month. *Rate Structure: Storm Water Fee*, SAN ANTONIO WATER SYS., [http://www.saws.org/service/rates/stormwater\\_fee.shtml](http://www.saws.org/service/rates/stormwater_fee.shtml) (last visited June 15, 2012). The Atlanta area has also introduced fees to encourage its citizens to mitigate stormwater runoff. A single-dwelling lot is charged approximately \$4 per month. *See, e.g., Stormwater Utility*, DEKALB CNTY., [http://www.co.dekalb.ga.us/publicwrks/stormwater\\_mangmt/index.html](http://www.co.dekalb.ga.us/publicwrks/stormwater_mangmt/index.html) (last visited August 7, 2012). These fees both encourage reduction of impervious surface and may provide funds for large-scale infrastructure projects aimed at water conservation. The result may be improved water quality as well as a much needed recharge of local groundwater resources.

In conclusion, drought conditions of 2008, 2011, and 2012 in Georgia and Texas show that North America should pay attention to freshwater as a limited resource. Regulatory responses that foster water management and infrastructure responses to promote harvesting and conservation of existing resources may help mitigate the impact of water shortages.

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