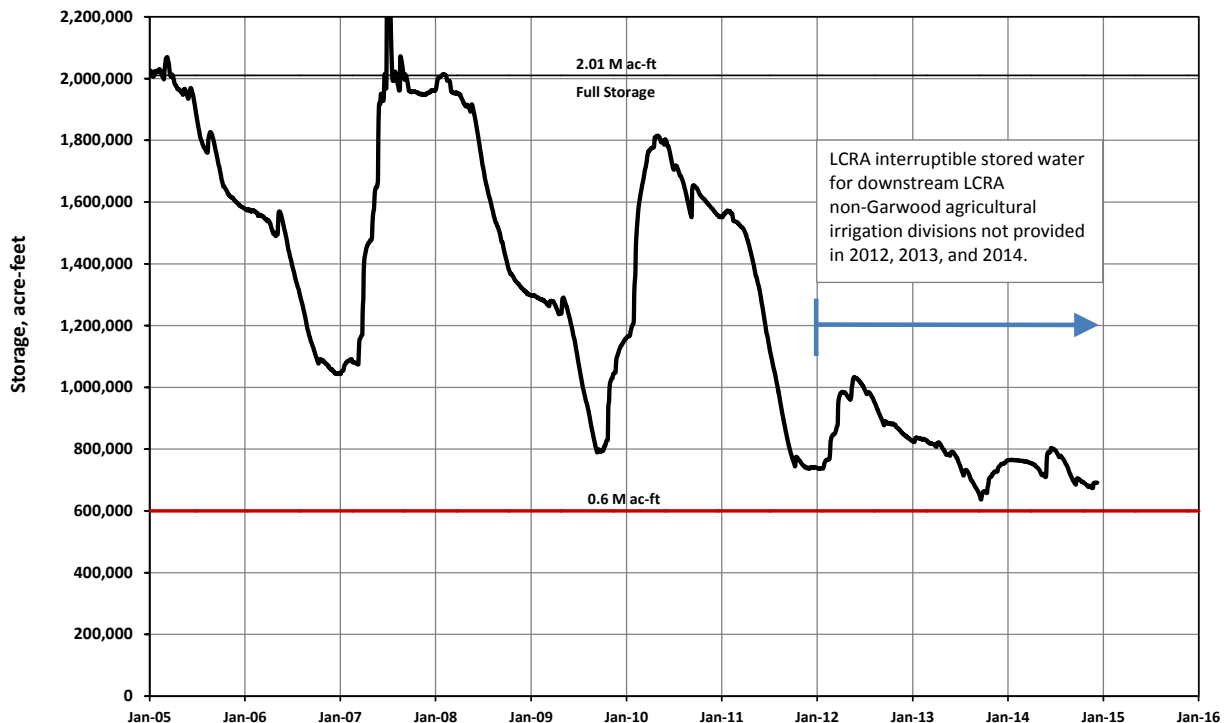




## Drought Status & Water Supply

### Monthly Report December 2014

**Combined Storage of Lakes Buchanan and Travis**  
January 1, 2005 through December 8, 2014



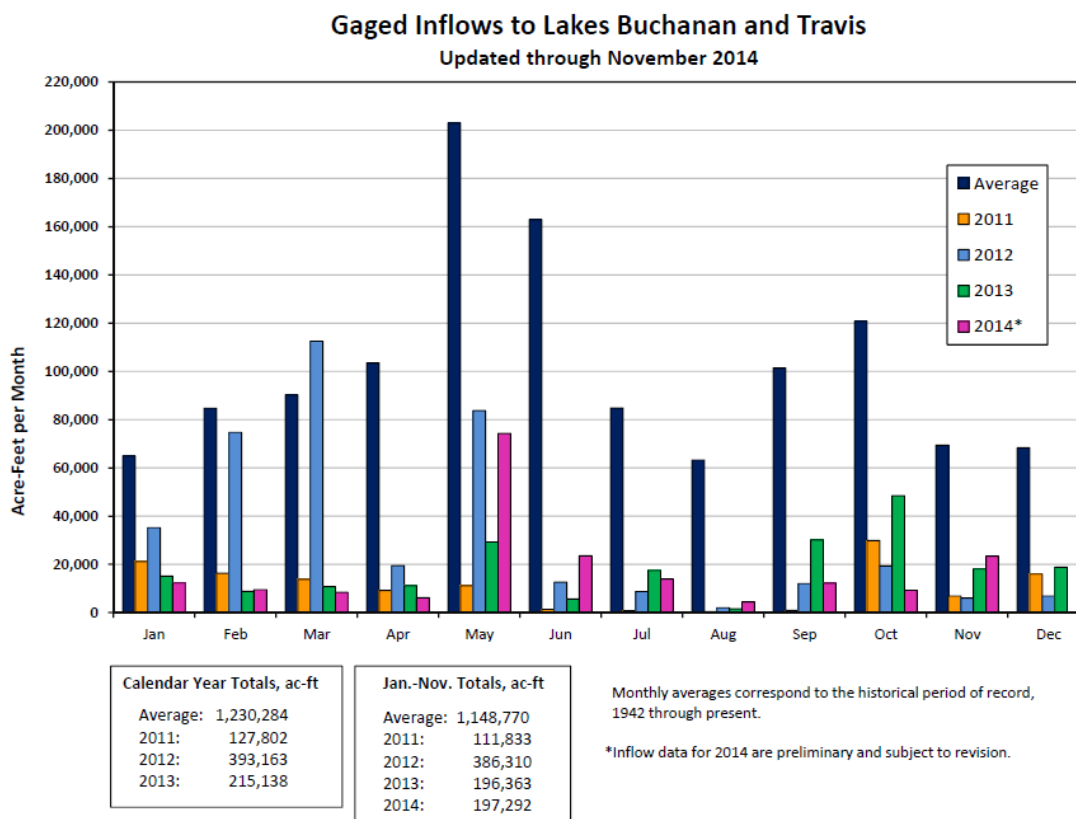
## Monthly Drought Status and Water Supply Report:

The Colorado River basin is experiencing an epic drought that is continuing to deepen and may continue to do so for years into the future. The information in this drought status and water supply report is updated on a monthly basis.

### Inflows to Lakes Travis and Buchanan:

Inflows to lakes Travis and Buchanan are a key measure of the drought's intensity. The top four all-time lowest inflow years in the period of record have occurred since 2005. These low annual inflows are each considerably lower than the lowest annual inflow during the 1950's drought of record (501,926 acre-feet (AF) in 1950). The extreme low inflows of 2011 were only 10% of the average annual inflow since lakes Travis and Buchanan were first filled in the early 1940's.

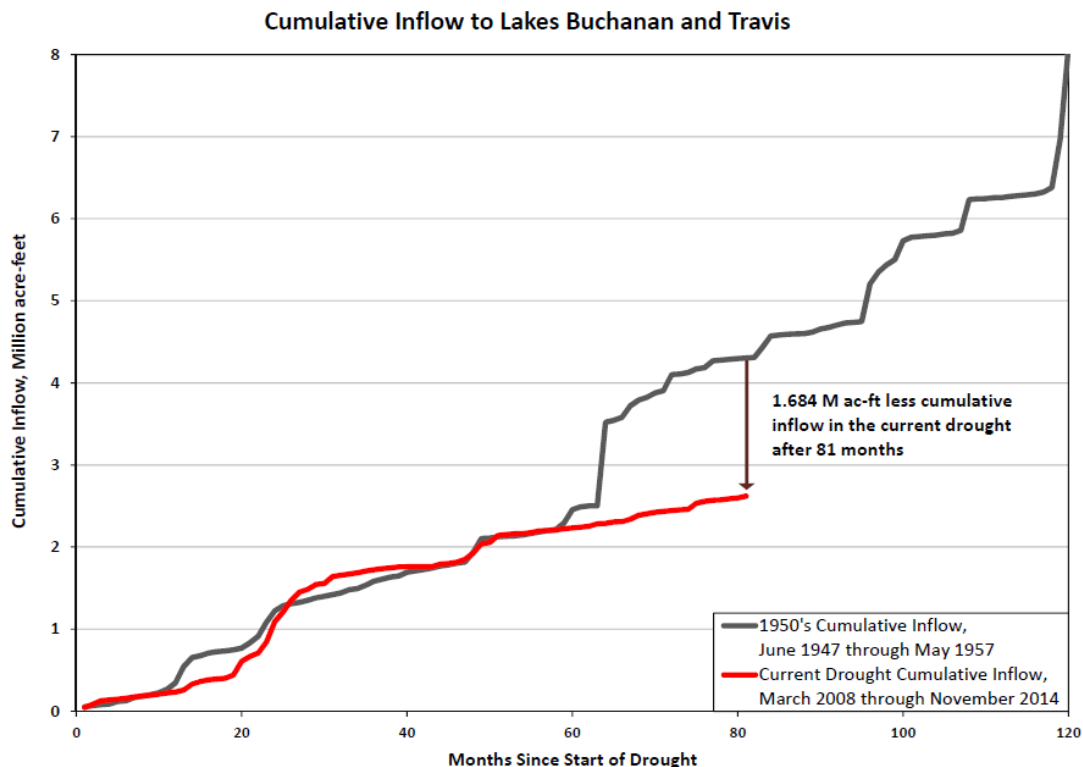
The January-November 2014 period is the 3<sup>rd</sup> driest January-November stretch, behind 2011 and 2013, since the lakes were built. The inflows during this 11-month period were 197,292 AF. One acre-foot equals 325,851 gallons. November 2014 lake inflow was 23,349 AF, which is approximately 34% of average for November. The monthly inflows for January 2011 through November 2014 are shown in the graph below:



The following is a table of the top 10 lowest inflow years. These inflows represent the volume of water flowing into lakes Travis and Buchanan on an annual basis.

Rank	Year	Annual Total in Acre-Feet
1	2011	127,801
2	2013	215,138
3	2008	284,462
4	2006	285,229
5	1963	392,589
6	2012	393,163
7	1983	433,312
8	1999	448,162
9	2009	499,732
10	1950	501,926
Average Annual Total	1942 to 2013	1,230,284

The cumulative inflow graph below shows the cumulative inflow into lakes Travis and Buchanan since March 2008 as compared to the cumulative inflow in the 1950's drought of record. The current cumulative volume of inflow is approximately 1.7 million AF below the cumulative inflow through the same number of months in the drought of the 1950's. These extreme low inflows represent uncharted territory for drought in this basin. The cumulative total of inflows to the lakes through the drought is a key hydrological measure of the drought's intensity and duration.

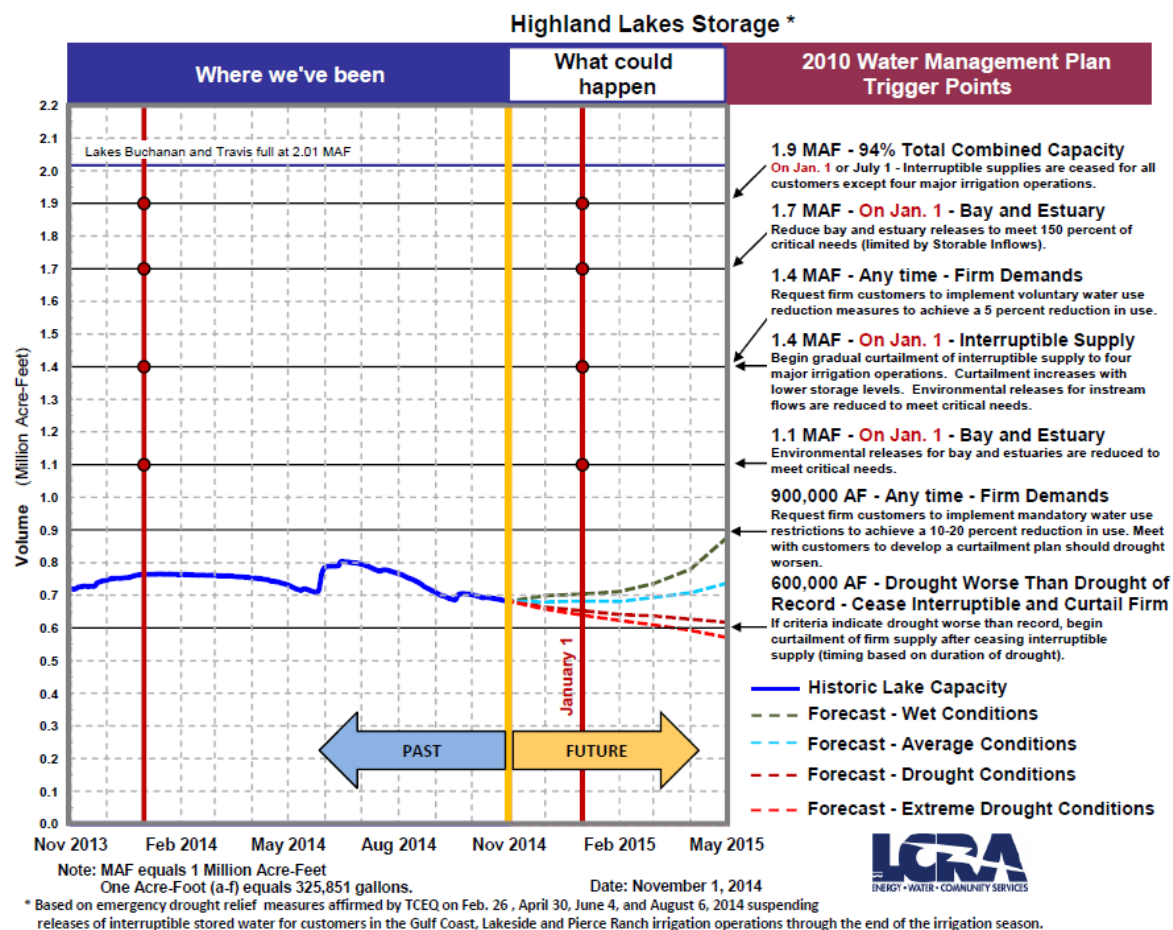


### Combined Storage Volume and Forecast:

Another key measure of the drought's duration is the combined storage volume of lakes Travis and Buchanan. As of December 9, 2014, the current combined storage was approximately 691,000 AF (34% of full). For reference, the lowest all-time combined storage volume was 621,221 on September 9, 1952. Last summer the combined storage reached as low as 637,046 AF on September 19, 2013.

LCRA's 6-month projection update for December is not yet available. The LCRA November 2014 projection is shown below.

November 1, 2014 LCRA 6-Month Combined Storage Projection:



Dropping to 600,000 AF of combined storage or below would be the final trigger requiring a declaration of a "Drought Worse than the Drought of Record" by LCRA's Board. This declaration would trigger LCRA mandatory pro-rata curtailment of firm water customers at an initial 20% reduction off of a baseline demand as recorded from September 2010 through August 2011. LCRA has indicated that 30% or more pro-rata curtailment requirements could be required at lower combined storage volumes. Specific LCRA combined storage volumes for deeper pro-rata curtailment levels have thus far not been established by LCRA's Board.

The following table shows the March 1<sup>st</sup> combined storage volume of lakes Travis and Buchanan over the past 5 years.

Year	March 1 <sup>st</sup> Combined Storage in Acre-Feet
2010	1,652,638
2011	1,534,658
2012	846,820
2013	822,364
2014	761,448

The graph on the cover page of this report shows the combined storage volumes in lakes Travis and Buchanan since January 2005. Although in LCRA Water Management Plan terminology, LCRA has been referencing early 2008 as the start of the current drought, based on when the lakes were last at their maximum allowable water conservation storage levels, a look at the combined storage graph shows that the pattern of this multi-year drought extends back through 2005. So, since unprecedented low inflow conditions can quickly return, a return to full lakes, as in 2007, does not necessarily mean that the multi-year drought is over.

#### Drought Conditions and Weather Outlook:

The National Oceanic and Atmospheric Administration (NOAA) National Weather Service Climate Prediction Center's United States seasonal drought outlook over a the mid to western parts of the lower Colorado River basin through February 2015 is a combination of two designations: "drought remains but improves" and "drought removal likely".

Based on their December 4, 2014 prediction, the National Weather Service Climate Prediction Center projects that there is an approximately 65% chance that El Niño conditions will be present during the Northern Hemisphere winter and last into the spring of 2015. However, while the forecast still calls for a chance of El Niño sea surface temperatures developing, for the time being, the combined atmospheric and oceanic state remains El Niño/Southern Oscillation (ENSO)-neutral, and the forecaster consensus favors a weak El Nino event. El Niño conditions have the potential to generate wetter weather patterns.

#### Demand-Side Management:

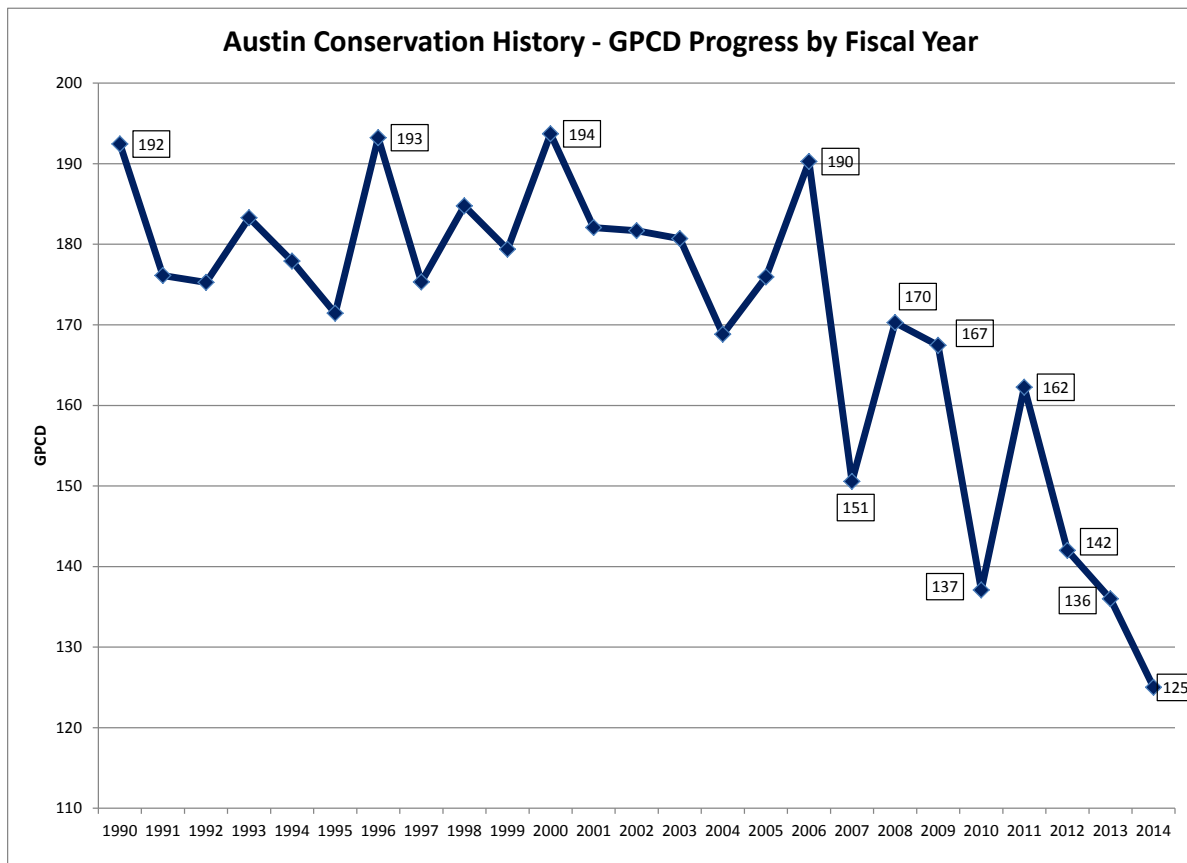
During this drought, and beyond, Austin's core water management strategies have included demand-side management through implementation of Austin's Water Conservation Program and Drought Contingency Plans, as well as continued development of water reuse.

Austin has been in Drought Contingency Plan (DCP) Stage 2 restrictions, which include no more than 1-day per week watering, nearly continuously since September 2011. Austin has already been meeting its initial 20% water use reduction goals consistent with LCRA-approved pro-rata firm customer curtailment goals in both years 2012 and 2013. As part of its firm water customer pro-rata curtailment plan process, LCRA confirmed

over 26,000 AF of documented annual water savings in the “reference year” (September 2010 through August 2011) from Austin’s water conservation programs, including water reuse. These documented annual water conservation savings do not include additional savings Austin has achieved through Stage 2 implementation.

In accordance with Austin’s Drought Contingency Plan (DCP), Austin is prepared to implement Stage 3 restrictions when the combined storage volume of lakes Travis and Buchanan falls below 600,000 AF. Stage 3 allows 1-day per week watering but further restricts watering hours and includes other additional restrictions.

Austin’s community response to water conservation and the drought continues to be significant. With the fiscal year (FY) wrapping up at the end of September, Austin’s water use in terms of gallons per capita per day (GPCD) for FY 2014 was 125 GPCD. The FY 1990 through 2014 GPCD values are shown on the graph below.



LCRA Water Management Plan (WMP) Revisions and Emergency Orders:

With more than a century of reliance and investment, Austin’s core supply and infrastructure systems are centered around the Colorado River supply. Therefore, protection of Colorado River system firm water interests is critical. Austin has senior water rights and firm water supply agreements with LCRA that provide Austin with firm water supplies of up to 325,000 AF per year. This amount is more than double Austin’s current level of demand.

LCRA's operations and management of the water stored in lakes Travis and Buchanan is guided by a Texas Commission on Environmental Quality (TCEQ)-approved document referred to as the LCRA Water Management Plan (WMP). LCRA's WMP is currently undergoing a critical revision process, being coordinated through TCEQ, which has been extended to incorporate drought year data (currently through the end of 2013).

Concurrently, LCRA has been operating under TCEQ Emergency Orders (EOs) for 2012, 2013, and 2014. These EOs allow LCRA to depart from operating under their current WMP. EOs and the on-going drought conditions have resulted in cut-off of interruptible stored water supply from lakes Travis and Buchanan for three of the four agricultural irrigation divisions in the lower counties of the lower Colorado River basin. The 2014 EO terminated on November 20, 2014.

At their November Board Meeting, the LCRA Board of Directors approved submittal of a request to TCEQ for a fourth year of emergency relief, for 2015, to cut-off large releases of interruptible water with the on-going drought. It is anticipated that the request will soon be submitted to TCEQ.

TCEQ is continuing to process LCRA's October 31, 2014 submittal of an amended and restated application to revise LCRA's Water Management Plan (WMP) in significant ways. Revisions include incorporating into the plan procedures for curtailing interruptible water (primarily used for downstream agricultural irrigation operations) such that combined storage in Lakes Travis and Buchanan is maintained above 600,000 AF through a repeat of historic hydrology through 2013 and incorporating a three-tier regime for determining water availability for interruptible agricultural customers that considers storage and inflow conditions.

City of Austin representatives continue to work diligently through the critical LCRA WMP revision process and 2015 TCEQ Emergency Order processes to proactively ensure reservoir management of Lakes Travis and Buchanan is consistent with Austin's firm water interests and with LCRA's duties under its lake permits and its agreements with firm customers such as the City.

#### Drought Response Planning Update:

##### Austin Water Resource Planning Task Force (AWRPTF)

The Austin Water Resource Planning Task Force (Task Force) was created by City Council (Resolution No. 20140410-033) in April 2014 to evaluate the City's water needs, to examine and make recommendations regarding future water planning, and to evaluate potential water resource management scenarios for Council consideration. The Task Force was charged with making recommendations on any alternative water sources including conservation, reuse, regional transmission systems and partnerships, groundwater, aquifer storage, as well as other potential sources in the region. The Task Force was supported by Austin Water and Watershed Protection.

The Task Force convened its first meeting on May 5, 2014 and met intensively through June 25, 2014 to execute their charge. The Task Force's final report and recommendations to Council is available on-line at:

<http://www.cityofaustin.org/edims/document.cfm?id=214146>

August 7, 2014 Council Resolution (Resolution No. 20140807-090)

On August 7, 2014, City Council passed a resolution (Resolution No. 20140807-090) directing the City Manager to report back to Council by September 25, 2014 with a proposed schedule, proposed plan, and proposed budget for implementing certain key recommendations from the Task Force report and to include a plan for a stakeholder process. Council Resolution No. 20140807-090 is available on-line at:

<http://www.austintexas.gov/edims/document.cfm?id=214617>

The September 25, 2014 report to Council summarizes the key AWRPTF recommendations from the Task Force report with schedule information, available preliminary budget information, and plans for stakeholder input.

The September 25, 2014 report to Council is available on-line at:

<http://www.cityofaustin.org/edims/document.cfm?id=218197>