



# Overview of Recent Rainfall Events

By: Jace Houston

Within a period of only six weeks, two incredible rainfall events occurred over Montgomery, Harris, Waller, and Washington counties. The first, now referred to as the Tax Day Flood, occurred on April 18th and primarily affected Waller and northwestern Harris counties and parts of southern Montgomery County. The second occurred on May 26th and 27th and primarily impacted Washington and Montgomery counties and northern Harris County.

The May 2016 event was an extraordinary rainfall event for Montgomery County. At one point, the Lake Conroe watershed experienced almost five inches of rainfall in less than two hours. Gauges in southern Montgomery County registered 11 to 13 inches of rainfall over a 48-hour period.

Figure 1 shows rainfall totals for the month of April. You can see the band of 15 to 20 inches of rain from Waller County into northwestern Harris County.

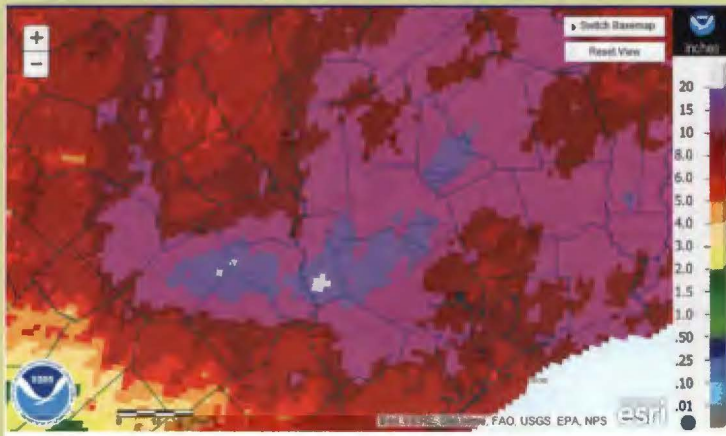


Figure 1. Rainfall totals for month of April.

Figure 2 shows the intense band of rainfall that fell in Washington and Montgomery counties on May 26th and 27th. You can see the distinct band of 12 to 20 inch accumulations across this area.

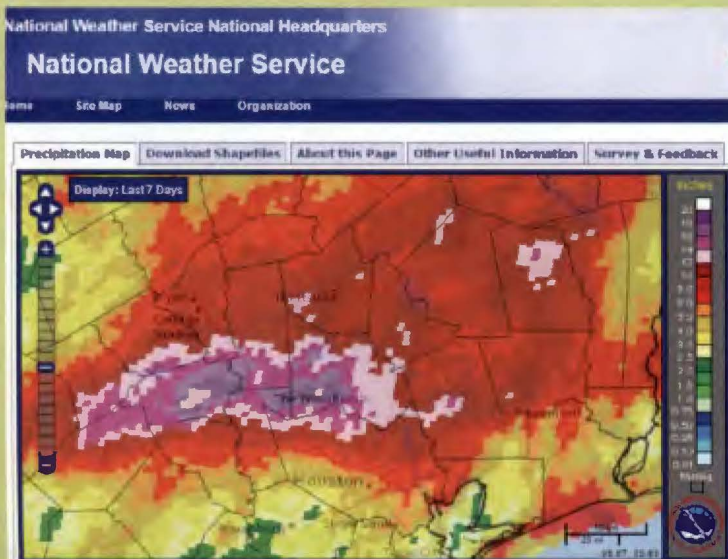


Figure 2. Rainfall totals for seven-day period including May 26-27.

## Comparison to Previous Rainfall Events

Many weather experts have made comparisons between the May 2016 rainfall event and the October 1994 event. At certain locations, the May 2016 event did exceed the rainfall totals for the October 1994 event, but overall the 1994 event generally had a greater impact in Montgomery County with a large area of 15 to 20 inches of rainfall compared to 12 to 15 inches for the May 2016 event.

Both of these events heavily impacted the Spring Creek and West Fork San Jacinto River watersheds. The following table compiled by Jeff Lindner with the Harris County Flood Control District shows rainfall comparisons at certain locations for several major weather events:

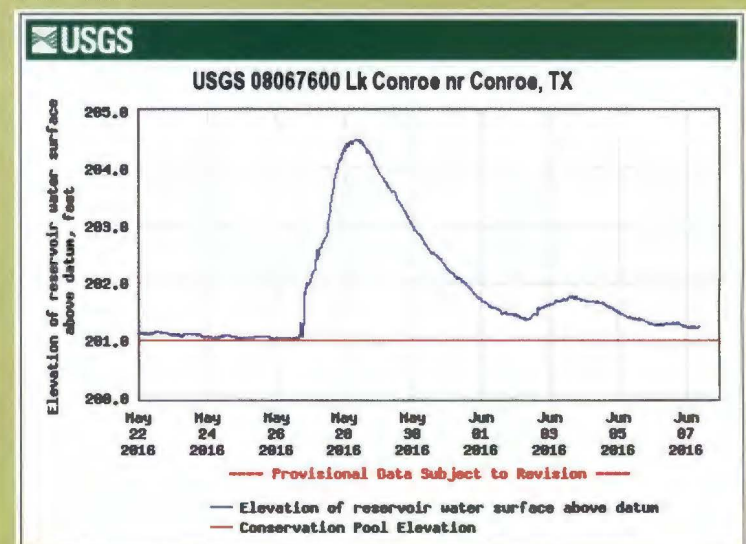
Location	24-Hour Rainfall in Inches				
	May 16	Apr 16	Oct 98	Nov 98	Oct 94
Mound Creek at Mathis	7.0	17.6	8.7	3.3	15.0
Cypress Creek at Katy Hockley	6.7	16.5	7.9	3.5	4.4
Spring Creek at SH 249	11.8	10.1	9.3	7.8	n/a
Spring Creek at FM 2978	12.4	11.0	n/a	n/a	n/a
Spring Creek at Kuykendahl	13.4	10.5	n/a	n/a	n/a
Spring Creek at I-45	8.0	9.4	7.0	6.1	5.9
Willow Creek at SH 249	9.4	12.6	7.9	7.2	6.3
West Fork San Jacinto at Kingwood	11.3	7.3	7.9	7.2	6.3
East Fork San Jacinto at FM 1485	8.1	6.5	13.3	8.2	10.9

## Lake Level Rise

As of 1:00 PM on May 28, 2016, Lake Conroe had crested at a level of 204.5' above mean sea level (msl). This is 3.5 feet above normal pool level. Lake Conroe's flowage easement is at 207' msl, which means that the lake can be raised up to six feet over normal pool level during a storm event.

Releases from the dam peaked at a release rate of 22,245 cubic feet per second (cfs). This peak occurred at 12:24 AM on the 28th. Based on an analysis of data from SJRA's gate operations models along with local rainfall and stream gauges, it is estimated that the peak inflow coming into Lake Conroe was approximately 90,000 cfs. This tremendous surge of water was buffered to some extent by the temporary rise of level in Lake Conroe.

The figure below shows the water level in Lake Conroe from May 24th – 29th.





At 204.5' msl, this is the second highest level that Lake Conroe has ever reached. To put this in perspective, below are data points for major rainfall events on Lake Conroe:

Date	Peak Lake Level	Peak Release
October 1994	205.6' msl	33,300 cfs
May 2016	204.5' msl	22,200 cfs
November 1998	204.2' msl	27,400 cfs
November 2002	203.8' msl	21,700 cfs
June 2001	203.8' msl	9,800 cfs
March 2016	203.1' msl	7,600 cfs
April 2016 (Tax Day)	202.3' msl	7,000 cfs

During major rainfall events, SJRA employees field numerous calls asking about rainfall totals and river levels. SJRA's website includes links to several excellent resources for tracking this information in real time.

**SJRA CONTRAIL WEB** - For anyone interested in monitoring the current conditions of the reservoir, SJRA provides continuous data regarding lake level and release rate on its homepage ([www.sjra.net](http://www.sjra.net)). In addition, real time gauge data can be accessed by clicking the link labeled "Lake & River Conditions" (look for the link labeled San Jacinto Contrail Web). Browse the different Sites for data from different gauges, or click the Home link for rainfall and reservoir maps.

**RIVER FORECAST CENTER** - For data regarding when the various rivers and streams in our area will reach their crest and begin to recede, visit the National Weather Service's River Forecast Center

at <http://water.weather.gov/ahps2/index.php?wfo=hgx>. Here you can click on a river or stream gauge and view a graph showing the historic and projected water level.

SJRA also receives numerous questions about whether releases from Lake Conroe are contributing to flooding in other areas. Some of these areas are not located downstream of Lake Conroe but instead are actually located in other watersheds. The map below (Figure 3) shows the different streams in the San Jacinto basin and what their peak flow was during the May 2016 event. ♦

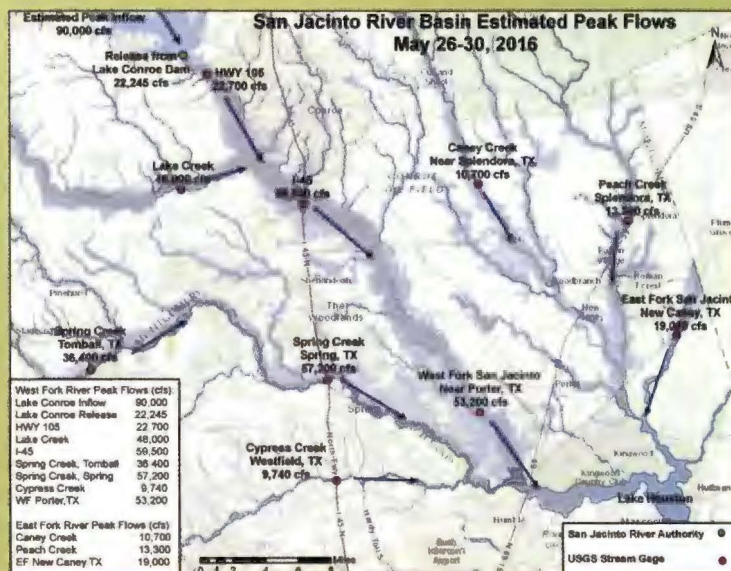


Figure 3. Peak Flows across the San Jacinto basin during May 2016 event.

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