



Air Quality Summary—August 2012



Baton Rouge Area

OZONE

There were no days that exceeded the National Ambient Air Quality Standard (NAAQS) for ozone in the Baton Rouge area during the month of August, 2012. Please see the graph on page two for daily air quality index levels in the Baton Rouge area during August.

There were no air quality action days during the month of August.

PM_{2.5}

There were no violations of the NAAQS for PM_{2.5} in the Baton Rouge area during the month of August, 2012. Please see the chart and table on the next page for detailed information on PM_{2.5} levels throughout the state.

Other Areas of the State

OZONE

There were no days that exceeded the National Ambient Air Quality Standard (NAAQS) for ozone in areas of the state other than Baton Rouge during the month of August, 2012. Please see the graph on page two for daily air quality index levels in the Baton Rouge area during August.

There were no air quality action days during the month of August.

PM_{2.5}

There were no violations of the NAAQS for PM_{2.5} during the month of August, 2012. Please see the chart and table on the next page for detailed information on PM_{2.5} levels throughout the state.

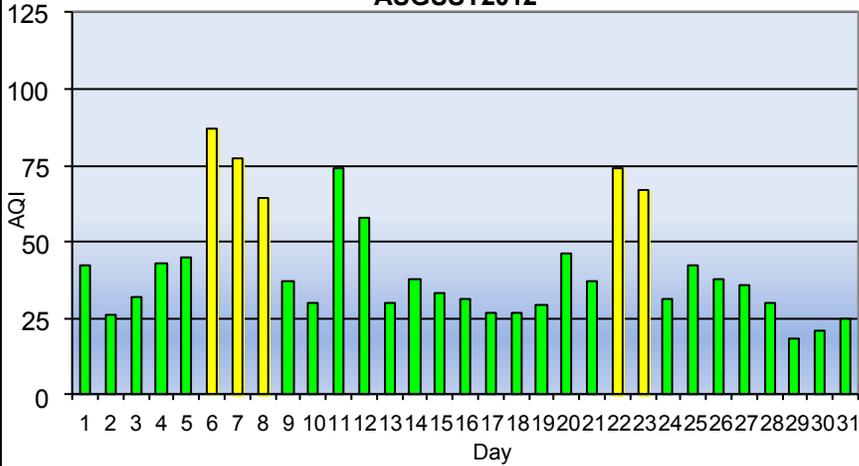
**Note: Hurricane Isaac made landfall in the pre-dawn hours of 8/29/12, causing power outages throughout the state. The data set used in this report is missing data from those sites without power from 8/29—8/31.*



Air Quality Summary—August 2012



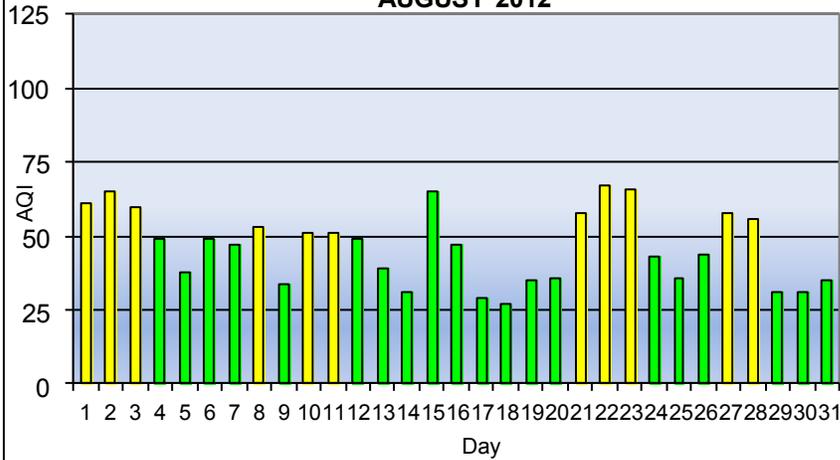
**Baton Rouge Area Daily Maximum AQI For Ozone
AUGUST 2012**



Statewide High PM_{2.5} 24-Hour Average Readings - AUGUST 2012

DAY	UG/m3	AQI	SITE
1	19.6	61	Alexandria
2	21	65	Chalmette Vista
3	19.2	60	Alexandria
4	15.1	49	Alexandria
5	11.6	38	Lafayette
6	15.1	49	Capitol
7	14.6	47	Shreveport Airport
8	16.2	53	Westlake
9	10.4	34	Westlake
10	15.5	51	Lafayette
11	15.7	51	Westlake
12	15.2	49	Capitol
13	12	39	Madisonville
14	9.6	31	Shreveport Airport
15	21.3	65	Alexandria
16	14.6	47	Alexandria
17	8.8	29	City Park
18	8.3	27	Alexandria
19	10.9	35	Alexandria
20	11.2	36	Capitol
21	18.2	58	Alexandria
22	21.8	67	Port Allen
23	21.7	66	Alexandria
24	13.2	43	Chalmette Vista
25	11.1	36	Chalmette Vista
26	13.6	44	Madisonville
27	18.2	58	Monroe
28	17.7	56	Monroe
29	9.6	31	Shreveport Airport
30	9.6	31	Westlake
31	10.9	35	Westlake

**Statewide Daily Maximum AQI For PM_{2.5}
AUGUST 2012**



**Note: Hurricane Isaac made landfall in the pre-dawn hours of 8/29/12, causing power outages throughout the state. The data set used in this report is missing data from those sites without power from 8/29—8/31.*

Baton Rouge Climate Summary—August 2012

*Prepared by: Jay Grymes

(based on available preliminary data as of September 28, 2012)

In the future, Baton Rouge metro area residents -- and residents throughout south Louisiana -- will remember August 2012 as **Isaac** month. The most destructive hurricane to hit Louisiana since 2008's **Gustav** and **Ike**, **Isaac's** slow forward motion and large wind field as 'he' approached the southeast Louisiana coast allowed this Category 1 landfalling hurricane to produce an unusually large storm surge up the Mississippi River channel and across the tidal lakes (Pontchartrain and Maurepas). In addition, **Isaac's** rains rank the storm as one of the biggest rain events ever for portions of southeast Louisiana, and arguably the largest widespread rain event for the region since 2001's **Allison**. Preliminary estimates from FEMA and the Louisiana GOH-SEP suggest that nearly 59,000 Louisiana residences suffered some degree of damage, with more than 2000 reporting damages in excess of \$20,000! An estimated 5400+ of those properties are in the extended Baton Rouge metro area.

August 2012 ends the run of warmer-than-normal months that has dominated the Baton Rouge metro area throughout the year -- August's average temperature of 82.2°F for Metro Airport is 0.7° below the monthly norm. Prior to August, every month since December 2011 has been warmer-than-normal based on data from Metro Airport!

Even with a cooler-than-normal August, Baton Rouge (and much of the U.S.) remains on target for establishing a record-high mean-annual temperature this year. For the period of January-thru-August, 2012 ranks as the warmest since at least 1930 for Baton Rouge, and more than 0.5°F warmer than 1990, the previous record-holder for the same eight-month period. While 0.5° may not seem like a large difference at first glance, such a departure accumulated over eight months is substantial. Short of a run of frequent Canadian air mass intrusions during the fall and a series of Arctic blasts prior to year's end, 2012 seems destined to become Baton Rouge's annual record setter for temperatures.

August daily maximum temperatures averaged 90.4°, more than 2° below the monthly norm. Daily maximums reached the 90's on 19 dates, with highs of 95° on Aug 1st and 96° on the 3rd. Yet clouds and rain held the daytime high to 79° on Aug 19th, and highs remained in the 80's during the final days of August thanks to **Isaac's** rains and clouds. By contrast, August daily minimums averaged 73.9°F, about one-half degree above the mean monthly minimum. Daily minimums were 75° or above on 15 dates, with lows dipping into the 60's on three dates: Aug 20, 21 & 23.

Table 1: Average "daylight hours" sky conditions (to 12,000 ft) during August 2012, based on automated ASOS observations from Baton Rouge's Metro Airport.

Sky Condition: Sunrise to Sunset (Sky Coverage)	Clear to Mostly Sunny (0/10ths – 3/10ths)	Partly Cloudy / Partly Sunny (4/10ths – 6/10ths)	Mostly Cloudy to Cloudy (7/10ths – 10/10ths)
No. Days	22	7	2

22 days of "fair to clear skies" are likely to be above average for August, and accounts for the run of warmer-than-normal days that dominated the first three weeks of the month. But 13 of the last 14 days of August were cooler-than-normal, with 6 of those days averaging 4° or more below the daily mean, resulting in a cooler-than-average August.

Daily sunrise-to-sunset periods for Baton Rouge ranged from 13.6 hours (August 1) to 11.8 hours (August 31).

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Table 2: Distribution of August 2012 rain totals based on sites (Table 3) with complete monthly records for the month (34 sites).

No. Stations ≥ 6.00"	No. Stations ≥10.00"	No. Stations 10.01" - 15.00"	No. Stations 15.01" – 20.00"	No. Stations ≥ 20.00"
34	3	10	19	2

Baton Rouge Metro Airport's total rainfall for August is a whopping 10.82", 5.00" above the 30-year norm. Thanks largely to **Isaac's** rains, not only is August 2012 the "wettest" month of the year for Metro Airport, but it is the "wettest" month for that location since August 2010. In fact, August 2012 ranks as the 8th "wettest" August for Baton Rouge since at least 1900.

A look at the reports from nearly three-dozen greater metro area reporting stations shows that Metro airport was one of the "drier" sites in the region during August 2012. Tables 2 and 3 display a huge range in August rain totals across the greater Baton Rouge metro area, ranging from under 10" (in sections of Pointe Coupee & West Feliciana Parishes) to more than 25" (central Livingston Parish). In fact, although August rainfall for Metro Airport was nearly double the norm, Metro AP's 10.82" is among the five lowest monthly totals for the entire region.

Based on 34 sites in Table 3 (with 'complete' monthly records), metro area regional rainfall for August 2012 averaged 15.47", with a median of 15.42" -- nearly three-times the August normal for Metro Airport!. Of the twelve regional sites with 30-year normals (Table 3), five reported departures of more than +10.0", with Livingston registering a departure-from-normal of +20.90" for the month!

Most locations reported measurable rainfall on 12 to 15 days during August. While **Isaac** accounted for the majority of monthly rainfall at every metro area reporting station, a number of sites experienced an earlier "wet" spell on August 18-19. More than half of the 34 metro area sites (Table 3) reported five or more August days with an inch or more of rain; by contrast, only 7 sites in the region had fewer than 4 days with 1" or more of rain.

August 2012 reports from the Baton Rouge Metro Airport ASOS weather platform included:

- 10 days with thunder, slightly below normal for the month (12-13 days, on average);
- 19 days with fog, but no days with "dense" fog (visibility < 1/4-mile); and
- only 1 day (Aug 10) with smoke and/or haze.

Daily winds at Metro Airport during August 2012 averaged 5.9 mph, well above the 28-year August average of 4.8 mph. (Climatologically, August is the month with the lowest average wind speeds.) But August 2012's monthly average is heavily skewed by **Isaac's** winds of Aug 28-30. Over that three-day period, Metro Airport daily winds averaged nearly 20 mph, with a daily average of 23.6 mph on the 29th. Peak gusts on all three days at Metro Airport were in the 30-40 mph range. During most other August days, winds were generally light; none of the remaining days during August averaged winds of 10.0 mph or more. In fact, August daily winds averaged less than 5.0 mph on 19 dates, with average daily winds under 3.0 mph ('near calm') on six days -- Aug 5-7, 11, and 19-20.

Baton Rouge Climate Summary—August 2012

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(based on available preliminary data as of September 28, 2012)

Table 3: August 2012 rainfall for selected sites across the greater Baton Rouge metro area. (Data are preliminary and provided courtesy of the National Weather Service, the LSU Southern Regional Climate Center, the LSU AgCenter, and the CoCoRaHS Volunteer Network.)

Rainfall-Recording Site	Monthly Rainfall	Monthly DFN	No. Days ≥ 0.01 "	No. Days ≥ 1.00 "
<i>NWS Cooperative Network Sites</i>				
BR – Metro Airport	10.82"	+5.00"	15	3
BR - Concord Estates	16.12"	+9.87"	14	5
BR - Sherwood Forest	22.63"	+15.77"	15	5
Clinton	M	--	--	--
Denham Springs	18.49"	+11.94"	15	5
Dutchtown	18.39"	--	15	4
Gonzales	19.38"	+13.25"	15	4
Livingston	26.58"	+20.90"	13	6
New Roads	8.21"	+3.51"	13	3
Oaknolia	10.95"	+4.54"	13	3
Plaquemine	11.63"	+6.70"	12	5
Port Allen	14.59"	+8.64"	15	5
St. Francisville	7.44"	+2.41"	14	2
St. Gabriel	15.02"	+10.21"	17	5
<i>CoCoRaHS Volunteer Observers</i>				
Baton Rouge 2.7 SW (LA-EB-2)	16.36"	--	14	6
Baton Rouge 3.5 E (LA-EB-14)	19.37"	--	14	5
Baton Rouge 2.5 E (LA-EB-27)	17.37"	--	14	5
Baton Rouge 4.3 S (LA-EB-41)	13.98"	--	14	3
Baton Rouge 1.4 WSW (LA-EB-46)	15.09"	--	14	3
Baton Rouge 5.3 S (LA-EB-47)	17.78"	--	13	5
Baton Rouge 2.1 S (LA-EB-48)	16.04"	--	14	5
Brownfields 5.8 NE (LA-EB-9)	10.62"	--	12	2
Inniswold 2.8 S (LA-EB-42)	15.60"	--	14	4
Monticello 3.0 ENE (LA-EB-19)	18.22"	--	11	5
Monticello 3.0 SSW (LA-EB-20)	15.81" <i>(i)</i>	--	--	--
Monticello 4.6 NNE (LA-EB-31)	15.18"	--	9	4
Shenandoah 2.1 W (LA-EB-18)	18.51"	--	14 <i>(e)</i>	5 <i>(e)</i>
Shenandoah 1.5 E (LA-EB-22)	17.44"	--	16	5
Shenandoah 0.8 W (LA-EB-36)	11.32" <i>(i)</i>	--	--	--
Zachary 3.5 WNW (LA-EB-28)	13.91"	--	12	5
Gonzales 4.0 S (LA-AS-5)	14.09"	--	13	5
Gonzales 1.8 NE (LA-AS-9)	13.94" <i>(i)</i>	--	--	--
Prairieville 1.8 NW (LA-AS-10)	16.79"	--	12	4
Port Vincent 4.4 W (LA-AS-2)	19.88"	--	12	5
Wakefield 0.9 WNW (LA-WF-4)	6.65"	--	11 <i>(e)</i>	4
<i>Additional Metro Area Sites</i>				
LSU Campus (LA-EB-33)	13.80"	--	13	4
WAFB-TV, Downtown BR	15.24"	--	14	4
LSU AgCenter Ben Hur Farm	13.65"	--	18	5

DFN - Departure-from-Normal , "--" - Normals Not Available , M - Missing Value

(e) - Estimated Value , *(i)* - Incomplete Total

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Tropical Outlook:

Tropical activity through August has demonstrated a flip-flop pattern of unusual activity. After a record-breaking “fast” start with a pair of storms in both May and June, July proved to be storm-free. But August has more than made up for the “quiet” during July, with eight ‘named’ storms forming in the Atlantic Basin, including Louisiana’s destructive **Isaac**. The eight August storms of 2012 ties the August record previously set in 2004. That makes 14 storms through August, with the climatological “peak” of the season yet to come.

For Louisiana, nearly half (47%) of ‘her’ historical landfalls have occurred during the month of September, with the Sep-Nov period accounting for more than half of all historical landfalls – the threat of a second ‘hit’ this season remains a concern.

Sea-surface temperatures (SSTs) in the eastern equatorial Pacific continue to be slightly warmer-than-normal -- roughly 0.5°C above-normal as of September – the first signs of a developing *El Niño*. Although conditions are still officially posted as “neutral” for the current phase of ENSO (*El Niño* / Southern Oscillation), consensus among ENSO/*El Niño* experts calls for fully-developed *El Niño* conditions to be in place in the coming weeks. As *El Niños* are associated with greater mid- and upper-level wind shear over the Atlantic Basin, the onset of *El Niño* is correlated with a reduction of tropical activity over the basin. In addition, following **Isaac’s** landfall, upper-level winds over the Gulf of Mexico have become increasingly “hostile.” Although this does not preclude the development of another Gulf storm in the latter half of the season, this is an optimistic sign, suggesting that the Gulf may be “closed for (tropical) business” for the remainder of 2012.

Extended Outlook:

NWS Climate Prediction Center (CPC) forecasts for the upcoming fall (October-thru-December, OND) indicate a 70%-80% chance for ‘near-normal to above-normal’ rainfall for the greater Baton Rouge area, with better than a 40% chance for “significantly” wetter-than-normal weather for the three-month period. The OND outlook for temperature provides no effective guidance, indicating “equal chances” for below-normal, near-normal and above-normal average temperatures over the three-month period.

A primary factor for the projection for “wet” conditions over the coming months is the anticipated onset of *El Niño*. Although there is no statistical link between *El Niño* with autumn rainfall, history shows that nearly 7-in-10 winter/springs are wetter-than-normal across south Louisiana when an *El Niño* is present during that time.

The *El Niño* outlook means little threat for a return of drought conditions over the next six months. However, the forecast an *El Niño* winter and spring suggests increased chances for local- and regional scale flooding for the southern parishes. Indeed, some of the highest flood stages recorded along south Louisiana rivers occurred during *El Niño* winter/springs.

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Figure 1: August 2012 Daily Maximum and Minimum Temperatures and Precipitation from the Baton Rouge Metro Airport ASOS.

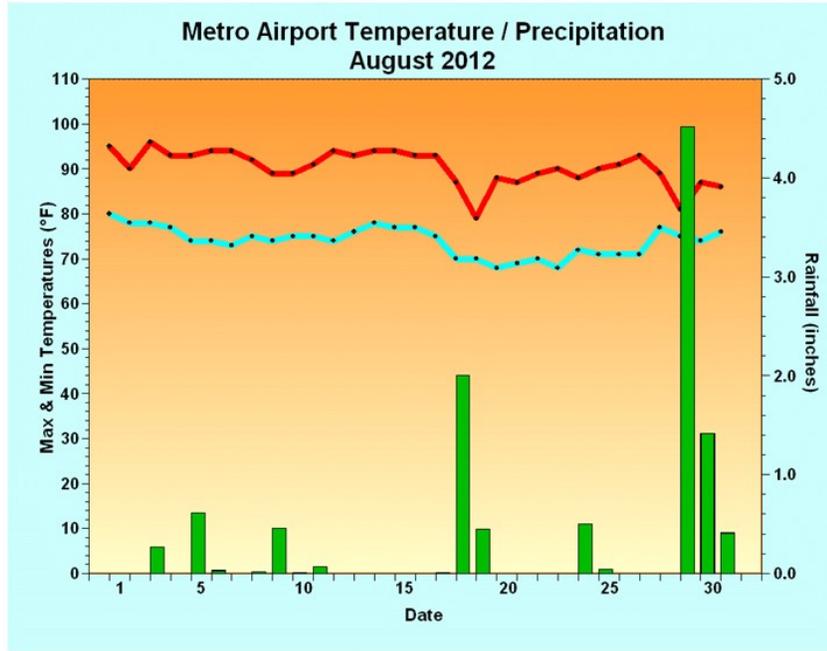
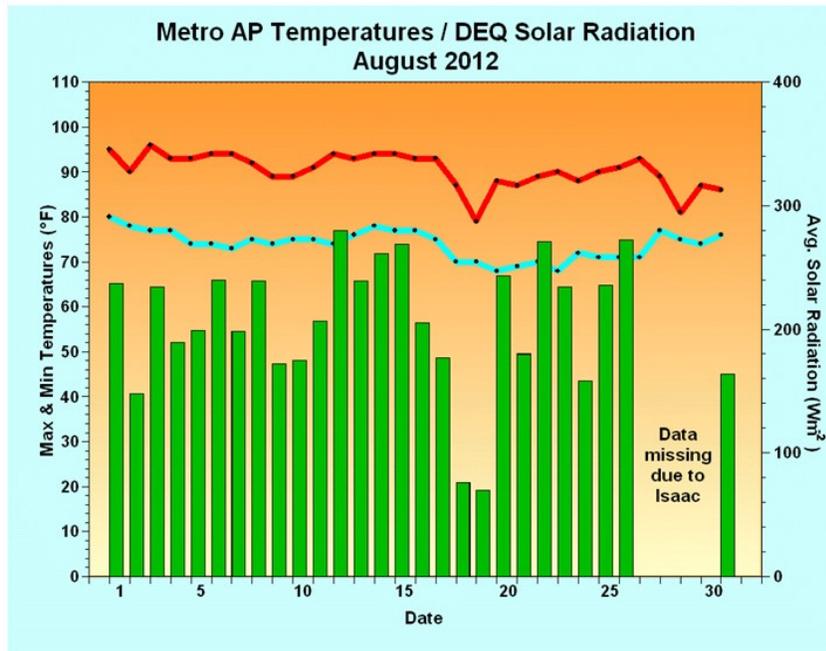


Figure 2: August 2012 Daily Average Hourly Solar Radiation as recorded at DEQ’s Capitol site and Daily Maximum and Minimum Temperatures from the Baton Rouge Metro Airport ASOS.



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Figure 3: Weekly **U.S. Drought Monitor** depiction for 4 September 2012.

Source: <http://drought.unl.edu/DM/>

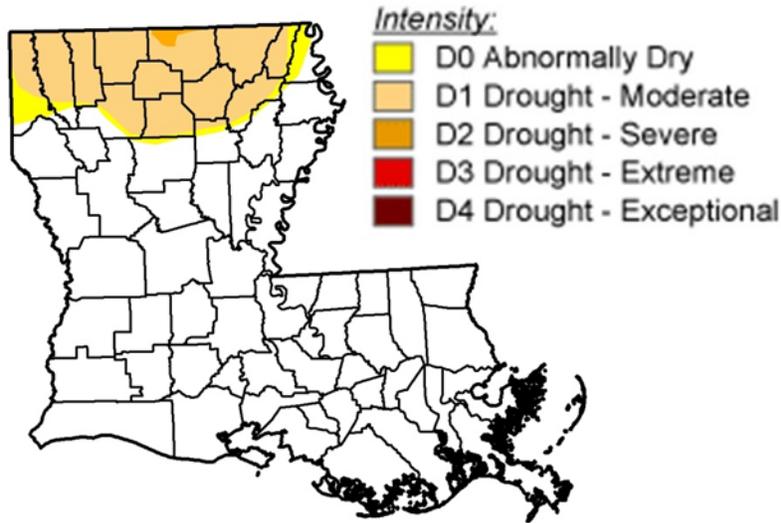


Table 4: August 2012 Preliminary 'Local Storm Reports' as posted by the NWS/SPC for the greater Baton Rouge metro area.

Date	Time (CDT)	Event	Location	Parish
--	--	** No Reports **	-----	--

Acknowledgements:

- National Weather Service offices serving Louisiana
- LSU Southern Regional Climate Center (SRCC)
- Louisiana Office of State Climatology (LOSC)
- LSU AgCenter / LAIS AgWeather Monitoring Program
- CoCoRaHS Volunteer Network
- U.S. Drought Monitor (<http://drought.unl.edu/DM/>)
- NWS Climate Prediction Center (NWS/CPC)
- NWS Storm Prediction Center (NWS/SPC)
- NWS Hydrometeorological Prediction Center (NWS/HPC)
- NOAA/National Climatic Data Center (NCDC)
- WAFB-TV (Ch. 9), Baton Rouge

Prepared by:

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28 September 2012

*Jay Grymes, LSU AgCenter Climatologist and WAFB Chief Meteorologist, provides the climatology portion of this report as a free service to DEQ and the citizens of Louisiana.