

Fig. 1b. Estimated % of Normal Rainfall for April 2017

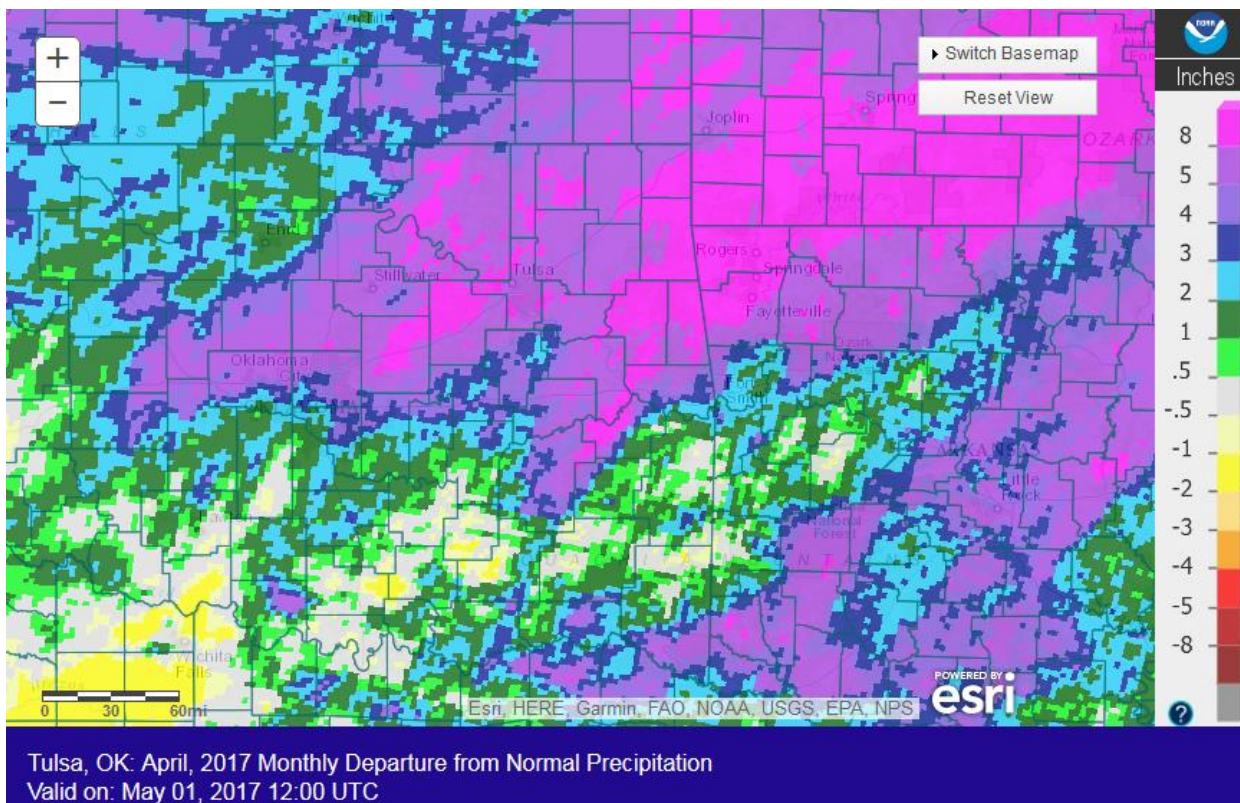


Fig. 1c. Estimated Departure from Normal Rainfall for April 2017

In Tulsa, OK, April 2017 ranked as the 31st warmest April (62.7°F, tied 1972, 1937; since records began in 1905) and the Record wettest April (10.44", previous record 9.33" in 2008; since records began in 1888). No snow fell this month. Fort Smith, AR had the 14th warmest April (65.5°F; since records began in 1883) and the 21st wettest April (7.06"; since records began in 1883). No snow fell this month. Fayetteville, AR had the 14th warmest (60.0°F, tied 1972) and the 2nd wettest (12.86", record is 15.28" in 2011) April since records began in 1950. No snow fell this month.

Some of the larger precipitation reports (in inches) for April 2017 included:

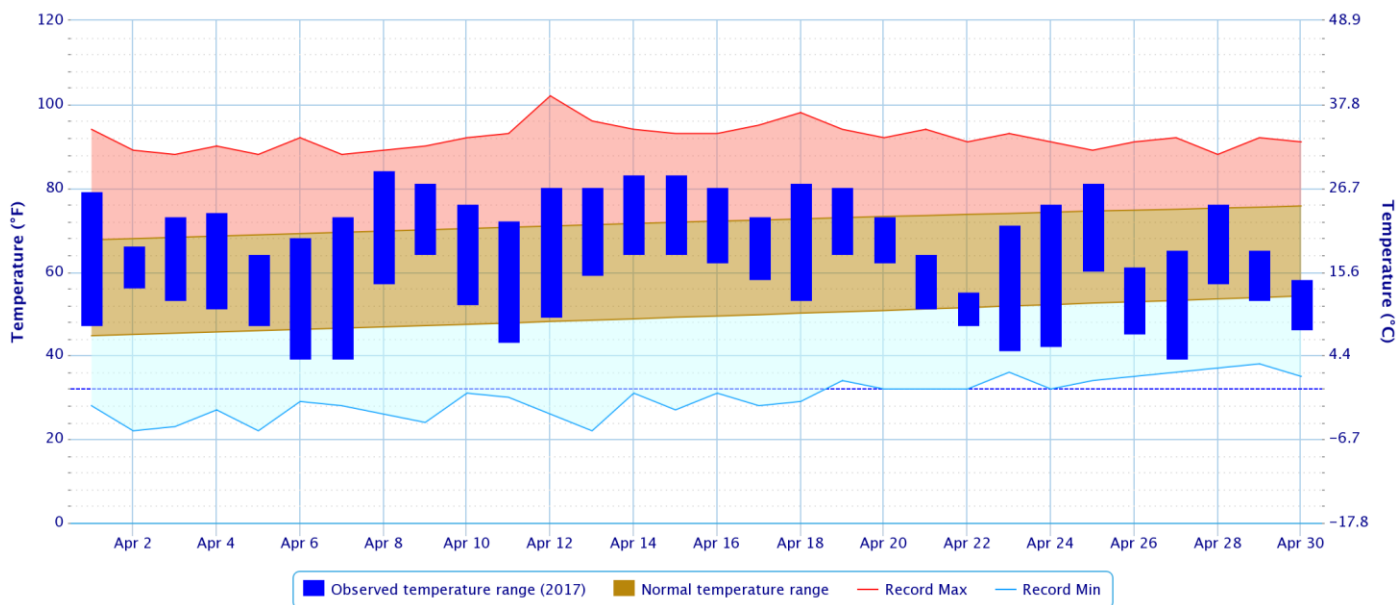
Rogers 2.1SE, AR (coco)	22.19	Springdale 6.4WSW, AR (coco)	20.51	Garfield 3.9E, AR (coco)	18.97
Viney Grove 2.4NW, AR (coco)	18.79	Hindsville 7.1NW, AR (coco)	18.73	Farmington 0.6WSW, AR (coco)	18.43
Springdale 5.8ENE, AR (coco)	18.17	Fayetteville 1E, AR (coco)	16.90	Tahlequah, OK (meso)	15.56
Eureka Springs 4NNW, AR (coco)	15.50	Berryville 0.8SSW, AR (coco)	15.32	Holiday Island 1.3SSW, AR (coco)	15.30
Gravette, AR (coop)	14.67	Fayetteville Drake Fld, AR (ASOS)	14.66	Hindsville 10NNE, AR (coop)	14.66
Westville, OK (coop)	14.43	Jay 3.3NNE, OK (coco)	14.32	Oilton, OK (meso)	14.29
Upper Spavinaw Port, OK (coop)	14.01	Siloam Springs 1.8N, AR (coco)	13.94	Pawnee, OK (meso)	13.87

According to statistics from the [Oklahoma Climatological Survey \(OCS\) Mesonet](#):

Rank since 1921	April 2017	Spring-to-Date (Mar 1 – Apr 30)	Last 90 Days (Jan 31 – Apr 30)	Year-to-Date (Jan 1 – Apr 30)	Last 180 Days (Nov 2 – Apr 30)	Water Year-to-Date (Oct 1 – Apr 30)	Last 365 Days (May 1, 2016–Apr 30, 2017)
Northeast OK	1st wettest	4th wettest	6th wettest	5th wettest	17 th wettest	13 th wettest	38 th wettest
East Central OK	3rd wettest	9th wettest	8th wettest	9th wettest	36 th wettest	48 th wettest	29 th driest
Southeast OK	22 nd wettest	36 th wettest	36 th wettest	40 th wettest	35 th driest	22 nd driest	16 th driest
Statewide	3rd wettest	9th wettest	9th wettest	6th wettest	21 st wettest	32 nd wettest	39 th wettest

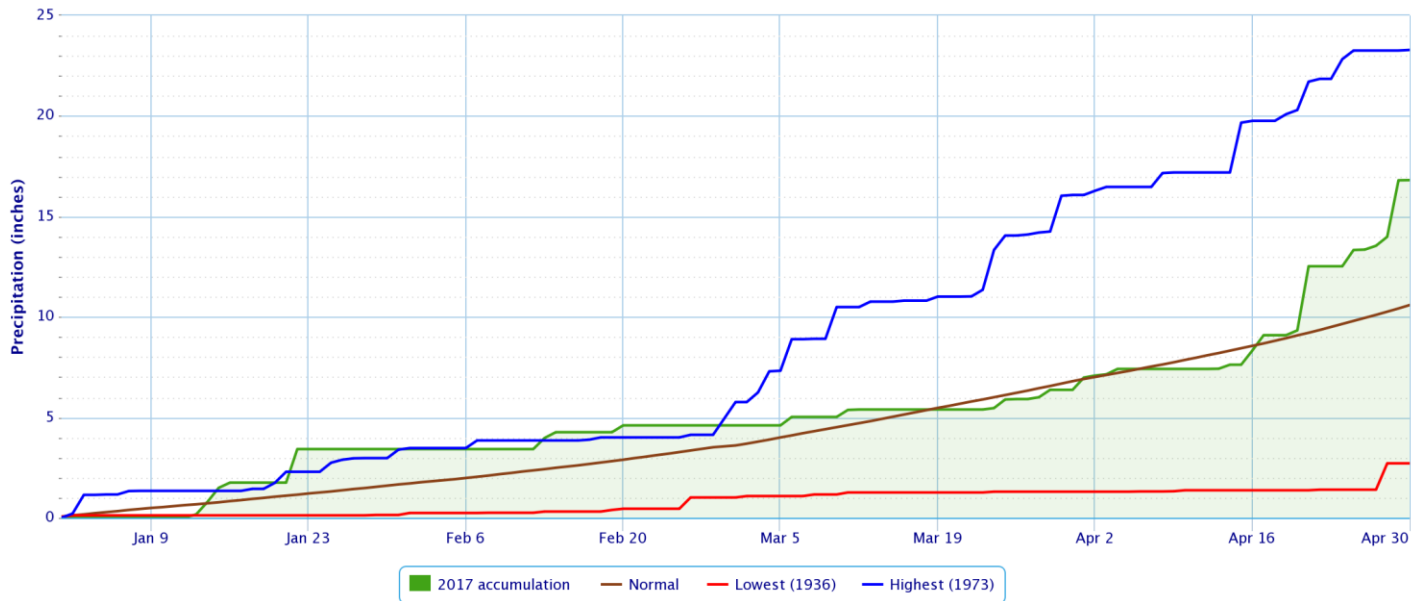
Daily Temperature Data – Tulsa Area, OK (ThreadEx)

Period of Record – 1905-01-06 to 2017-05-16. Normals period: 1981-2010. Click and drag to zoom chart.



Accumulated Precipitation – Tulsa Area, OK (ThreadEx)

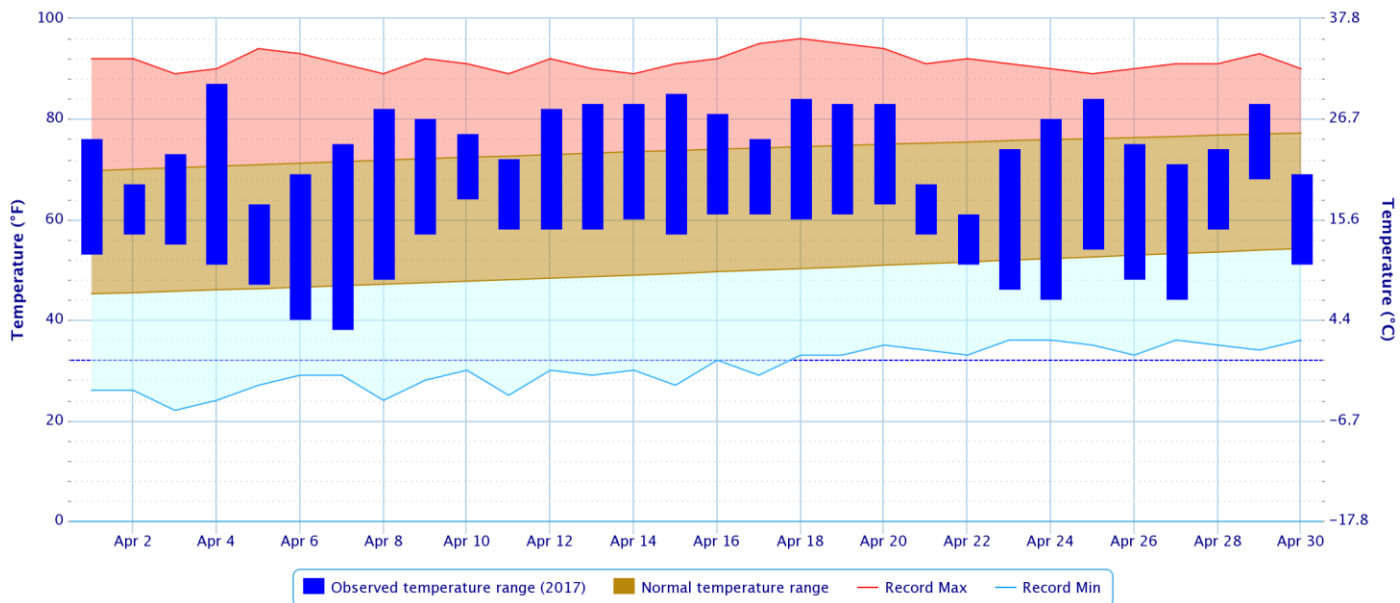
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



Powered by ACIS

Daily Temperature Data – Fort Smith Area, AR (ThreadEx)

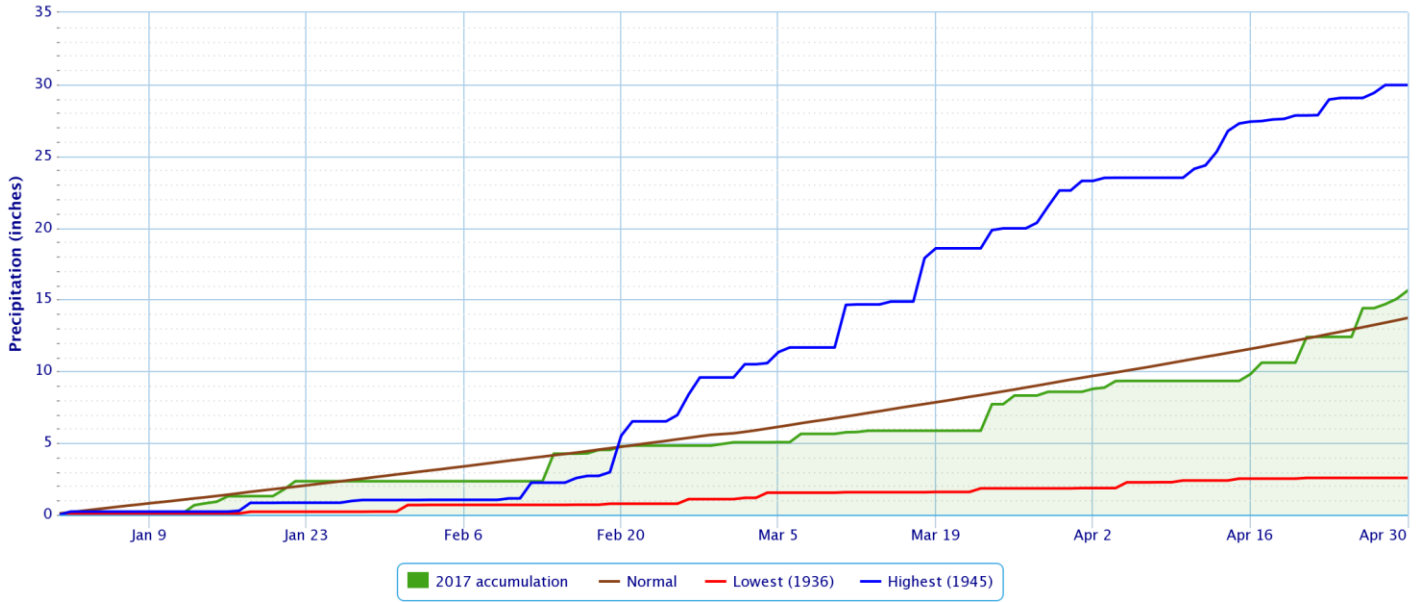
Period of Record – 1882-06-01 to 2017-05-16. Normals period: 1981-2010. Click and drag to zoom chart.



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Accumulated Precipitation - Fort Smith Area, AR (ThreadEx)

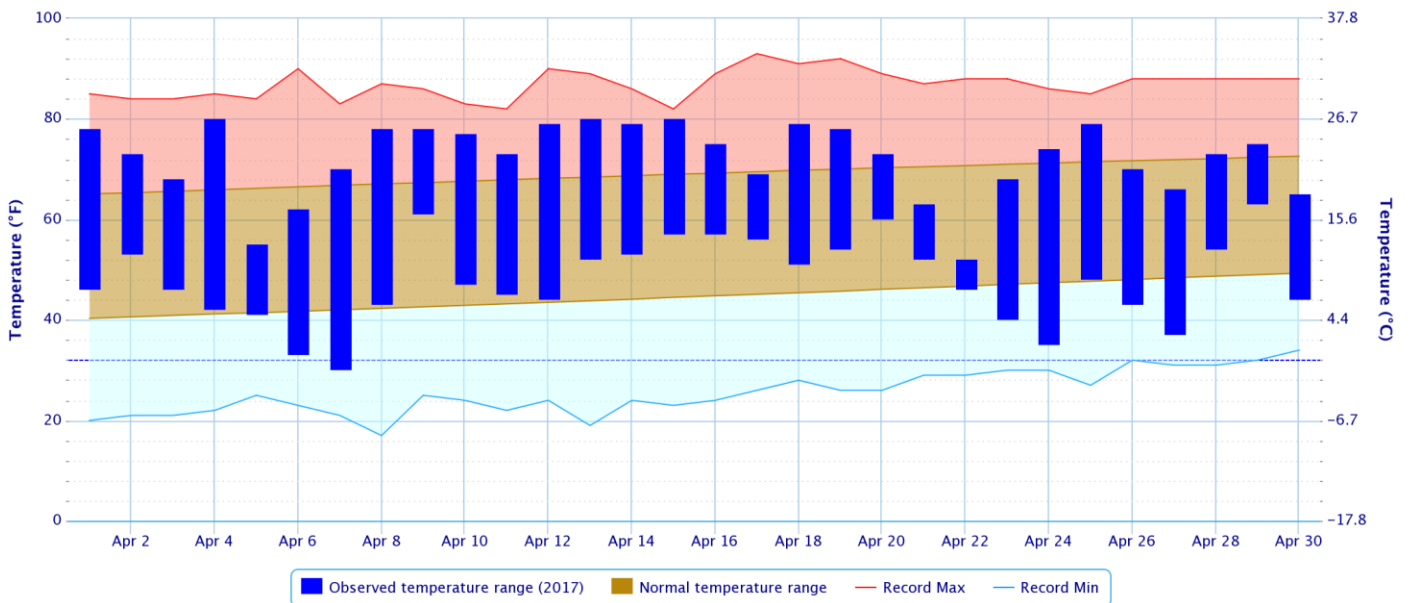
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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Daily Temperature Data - FAYETTEVILLE DRAKE FLD, AR

Period of Record - 1949-07-14 to 2017-05-16. Normals period: 1981-2010. Click and drag to zoom chart.



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According to the USACE, most of the lakes in the HSA were well into their flood pools as of 5/01/2017. Reservoirs operating more than 25% above the top of their conservation level include: Hudson Lake 192%, Grand Lake 187%, Tenkiller Lake 173%, Fort Gibson 161%, Oologah Lake 149%, Keystone Lake 148%, Skiatook Lake 143%, Hulah Lake 132%, Heyburn Lake 131%, Birch Lake 129%, Kaw Lake 127%. Beaver Lake reached 114% of flood storage on April 30, 2017.

Drought

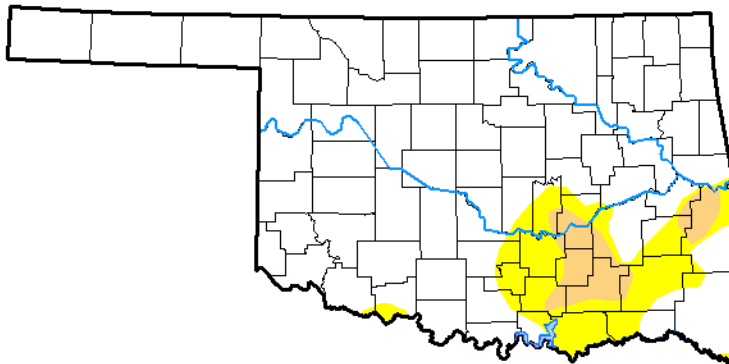
The rain at the end of the month dramatically improved the drought conditions across eastern OK and northwest AR. According to the [U.S. Drought Monitor](#) (USDM) from May 2, 2017 (Figs. 2, 3), D1 (Moderate Drought) conditions remained over southwest Pittsburg, far northeast Latimer, far eastern Haskell, and northeast Le Flore Counties in eastern OK and southern Franklin County in northwest AR. D0 (abnormally dry conditions but not in drought) were present across portions of Pittsburg, Pushmataha, Choctaw, Latimer, and Le Flore Counties in eastern OK, and Crawford, Sebastian, and Franklin Counties in northwest AR.

U.S. Drought Monitor Oklahoma

May 2, 2017
(Released Thursday, May. 4, 2017)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	84.92	15.08	4.26	0.00	0.00	0.00
Last Week <i>04-25-2017</i>	66.53	33.47	16.81	0.00	0.00	0.00
3 Months Ago <i>01-31-2017</i>	4.44	95.56	79.46	30.95	3.90	0.00
Start of Calendar Year <i>01-03-2017</i>	5.61	94.39	83.21	55.75	5.55	0.00
Start of Water Year <i>09-27-2016</i>	57.82	42.18	19.04	3.05	0.00	0.00
One Year Ago <i>05-03-2016</i>	87.75	12.25	1.67	0.00	0.00	0.00



Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

Brian Fuchs
National Drought Mitigation Center

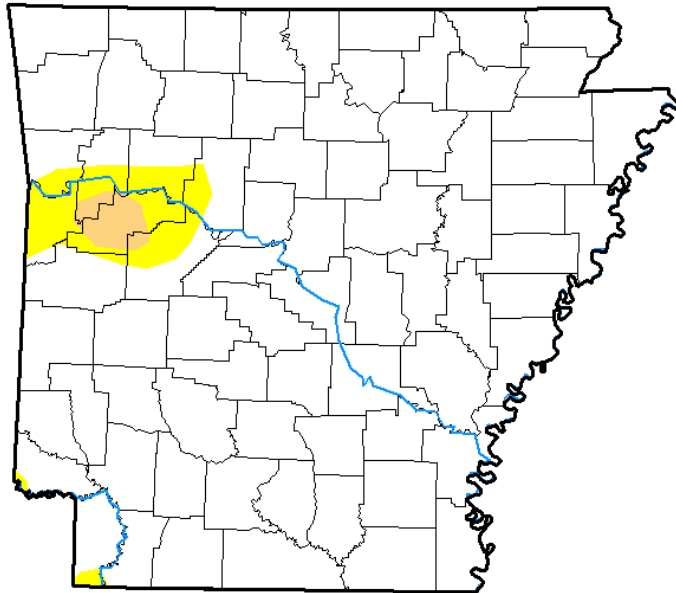


<http://droughtmonitor.unl.edu/>

Fig. 2. Drought Monitor for Oklahoma

U.S. Drought Monitor Arkansas

May 2, 2017
(Released Thursday, May 4, 2017)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	94.76	5.24	1.11	0.00	0.00	0.00
Last Week 04-25-2017	55.51	44.49	7.78	0.00	0.00	0.00
3 Months Ago 01-31-2017	49.31	50.69	30.46	12.50	2.02	0.00
Start of Calendar Year 01-03-2017	27.05	72.95	39.03	7.99	2.02	0.00
Start of Water Year 09-27-2016	71.02	28.98	0.00	0.00	0.00	0.00
One Year Ago 05-03-2016	82.09	17.91	0.00	0.00	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

Brian Fuchs
National Drought Mitigation Center



<http://droughtmonitor.unl.edu/>

Fig. 3. Drought Monitor for Arkansas

Outlooks

The [Climate Prediction Center](#) (CPC) outlook for May 2017 (issued April 30, 2017) indicates a slightly enhanced chance for below normal temperatures across northeast OK and northwest AR, and equal chances for above, near, and below normal temperatures over southeast OK. This outlook also indicates a slightly enhanced chance for below median rainfall over northeast OK and far northwest AR, with an equal chance of above, near, and below median rainfall elsewhere. This outlook takes into account weather conditions forecast over the next 1-2 weeks and to a lesser extent, subseasonal climate signals in the weeks 3-4 time frame. Madden-Julian Oscillation (MJO) activity could influence the latter half of May and therefore, was minimally considered in the outlook.

For the 3-month period May-June-July 2017, CPC is forecasting an enhanced chance for above normal temperatures and an equal chance for above, near, and below median rainfall across all of eastern OK and northwest AR (outlook issued April 20, 2017). This outlook is based on both statistical and dynamical forecast tools and decadal timescale climate trends. According to CPC, Pacific sea surface temperatures along the equator continue to indicate ENSO-neutral conditions, which are favored to persist through the spring. There is significant uncertainty in the ENSO phase beyond that time, with a 50% chance for El Niño conditions developing as autumn approaches.

Summary of Precipitation Events Daily quality controlled rainfall maps can be found at: http://water.weather.gov/precip/index.php?location_type=wfo&location_name=tsa

April 1-15

A line of showers and thunderstorms developed along I-35 in central OK during the afternoon hours of the 1st, and moved eastward into eastern OK during the evening. This activity continued through the overnight hours, before dissipating shortly after sunrise on the 2nd. The majority of the rainfall affected northeast OK along and northwest of I-44, where 0.50" to 2" and isolated areas of 2"-3" of rain occurred (Fig. 4).

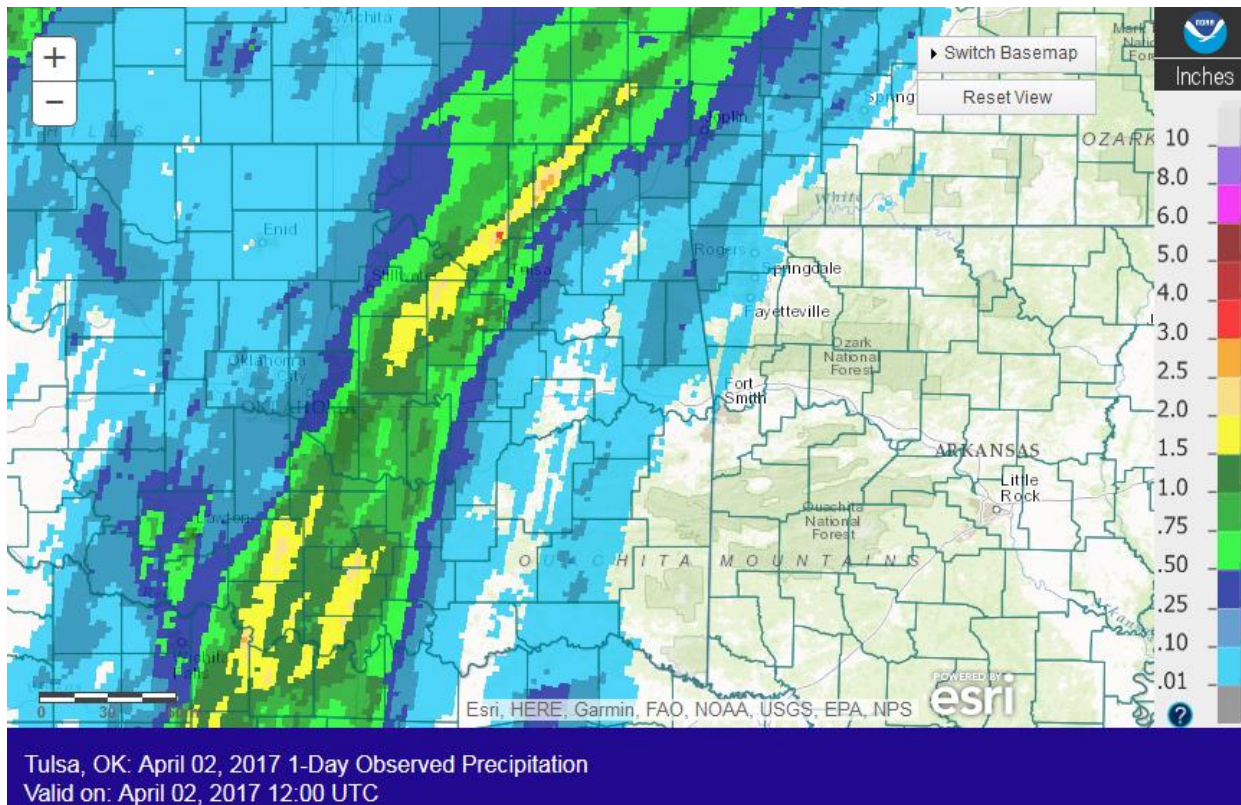


Fig. 4. 24-hour Estimated Observed Rainfall ending at 7am CDT 4/02/2017.

Widespread showers and thunderstorms over TX spread northeast into southeast OK mid-morning on the 2nd, and continued to overspread much of eastern OK and northwest AR south of I-44 during the afternoon. This was due to stronger forcing in association with both an upper-level and surface low that tracked from eastern TX into southwest MO. Wrap around rainfall moved into northeast OK after midnight on the 3rd and affected northeast OK and northwest AR into the early morning hours. Rainfall totals ranged from around 0.10" to around 1.5". Additional development occurred over northeast OK and northwest AR on the morning of the 3rd as a boundary moved southeast through the region. This activity pushed east of the area by noon and brought a few hundredths to around 0.50" of rain.

A mesoscale convective system (MCS) moved east along the OK/KS border and into northeast OK, primarily north of a Bristow to Wagoner line, in the pre-dawn hours of the 4th. This activity produced a few hundredths to near 0.50" of rain. Widely scattered showers and thunderstorms continued to affect the area through the morning and afternoon. A vigorous upper-level wave moved out of the Texas panhandle, combined with a surface low in northwest OK and a warm front extending into northeast OK, resulted in strong to severe thunderstorms as strong surface heating eroded the cap during the late afternoon and evening hours. These storms transitioned to a line of storms as they moved across eastern OK and into northwest AR through the evening hours. Due to the quick movement of the storms, rainfall totals were around 0.10" to around 0.75". However, further north, widespread rainfall totals of 0.50" to 1.5" fell over the Neosho River basin in southeast KS, resulting in minor flooding along the Neosho River near Commerce (see E3 Report for details; preliminary hydrograph available at the end of this report). Widely scattered showers developed on the backside of the departing low pressure system on the 5th, bringing an additional 0.10" or less of rain to the region.

Shortly after noon on the 10th, showers and thunderstorms developed near a cold front over southeast OK and northeast TX and continued through the evening hours. While most of this activity remained just southeast of the NWS Tulsa area, 0.50"-2.5" of rain did impact far southeast OK (Fig. 5).

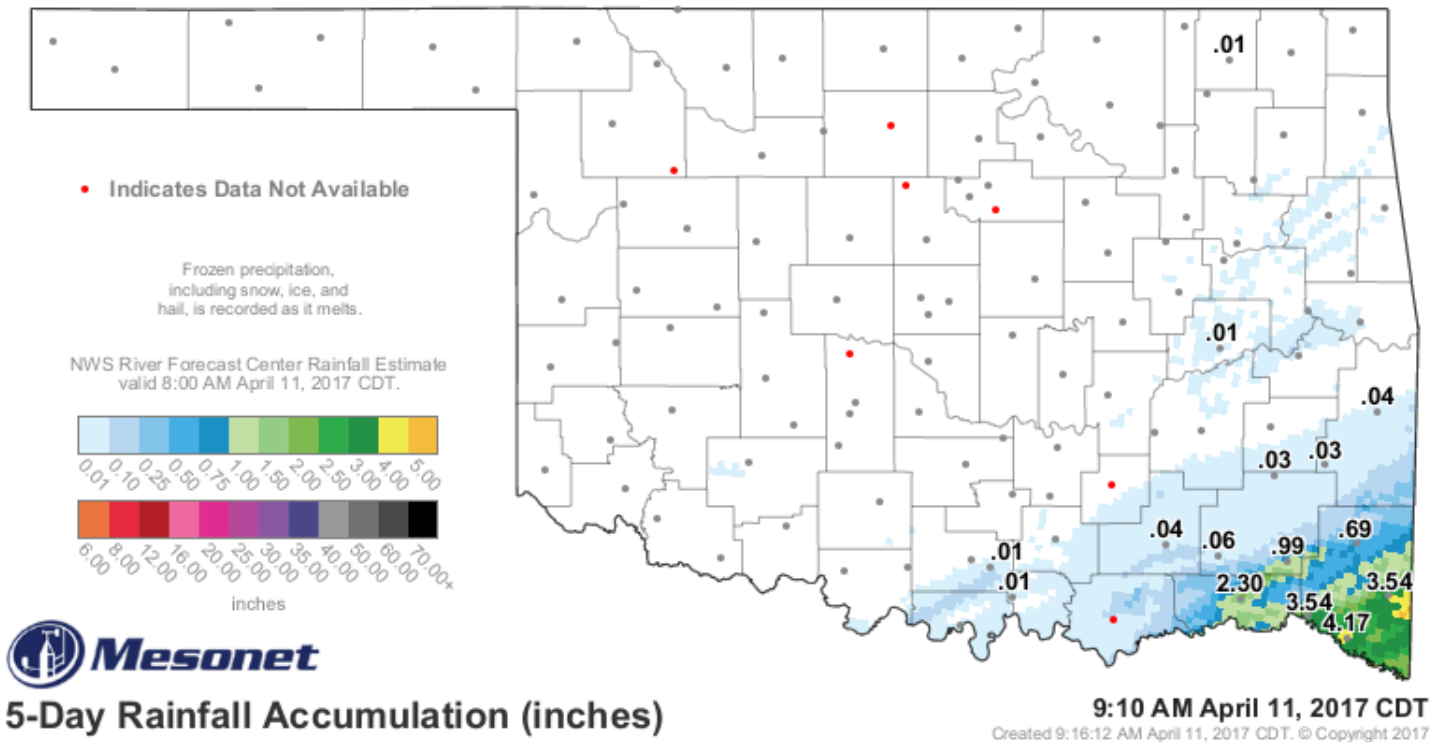
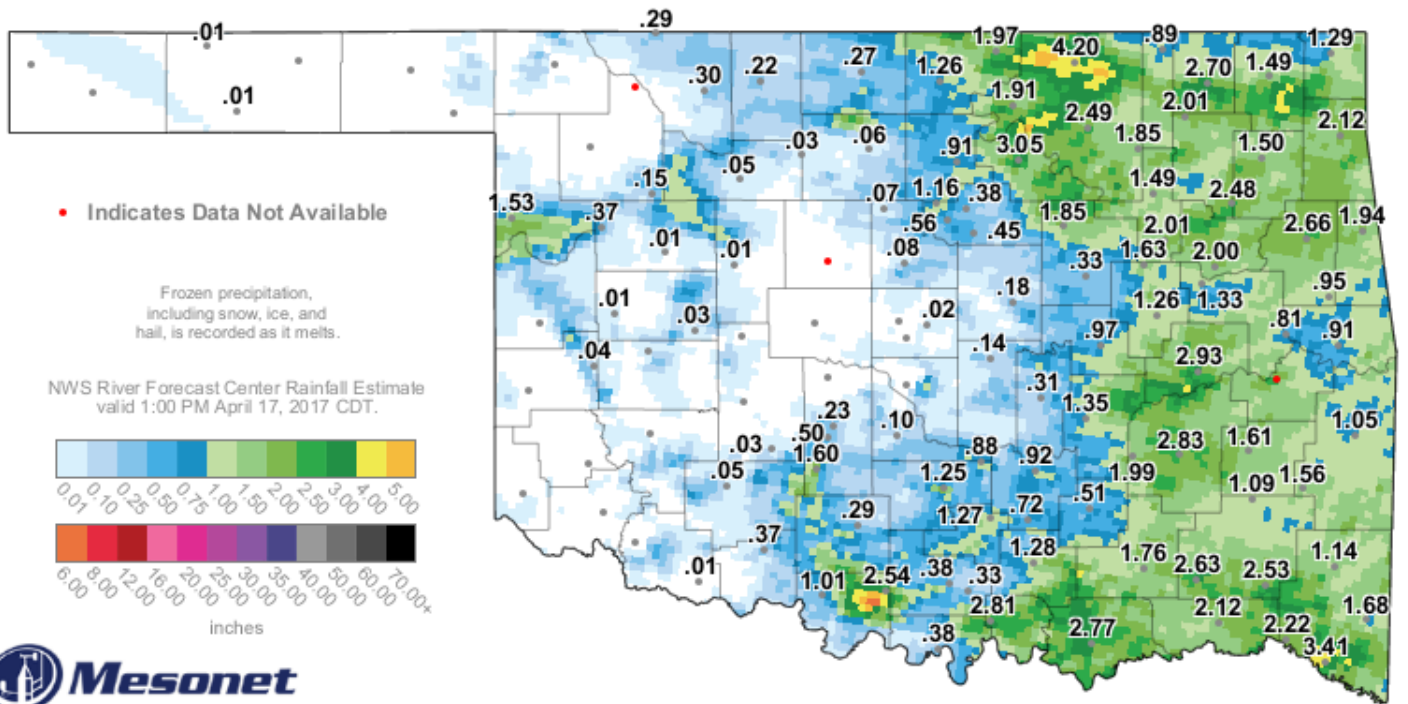


Fig. 5. 5-Day Estimated Observed Rainfall (image) and OK Mesonet measurements ending at 9:10 am CST 04/11/2017.

On the eastern and southern periphery of a low pressure system, a broad band of showers and storms developed on the 13th across western and central OK, and an MCV from the previous night's convection was moving north over NW OK. This activity moved east into eastern OK during the early evening hours, with additional isolated showers and storms just ahead of it where more daytime heating occurred outside of the cloud shield. All of this activity primarily affected locations along and west of the Highway 75 corridor through the evening and overnight hours. Rainfall totals along and west of Highway 75 were 0.25" to 1.5", with a few locations receiving 1.5" to 2" of rain.

April 16-30

During the pre-dawn hours of Easter morning, April 16th, a mesoscale convective system (MCS) moved south out of KS and into northeast OK. This line of storms continued to push southeast across northeast and east central OK and northwest AR during the morning and weakened as it moved east of the area during the early afternoon hours. Additional thunderstorms developed during the evening near a synoptic boundary across northeast OK and slowly progressed east southeast into northwest AR around midnight. The storms then grew into another MCS and moved further south expanding over all of eastern OK and northwest AR through the early morning hours of the 17th. Widespread showers and thunderstorms continued through the morning, ending from north to south, and came to an end mid-afternoon. Rainfall totals from the 2 MCSs ranged from 0.75" to around 5". Most of eastern OK and northwest AR received a beneficial 1"-2" of rain, with the heaviest totals of 3"-5" across northeast OK (Figs. 6, 7). The heavy rain over Osage County resulted in flash flooding and minor flooding along Bird Creek from Avant to Sperry (see E3 Report for details; preliminary hydrographs available at the end of this report). Bird Creek near and downstream of Sperry and points along the Caney River downstream of Ramona rose to just below flood stage as well from this rain.



2-Day Rainfall Accumulation (inches)

2:30 PM April 17, 2017 CDT

Created 2:35:42 PM April 17, 2017 CDT. © Copyright 2017

Fig. 6. 2-Day Estimated Observed Rainfall (image) and OK Mesonet measurements ending at 2:30 pm CDT 04/17/2017.

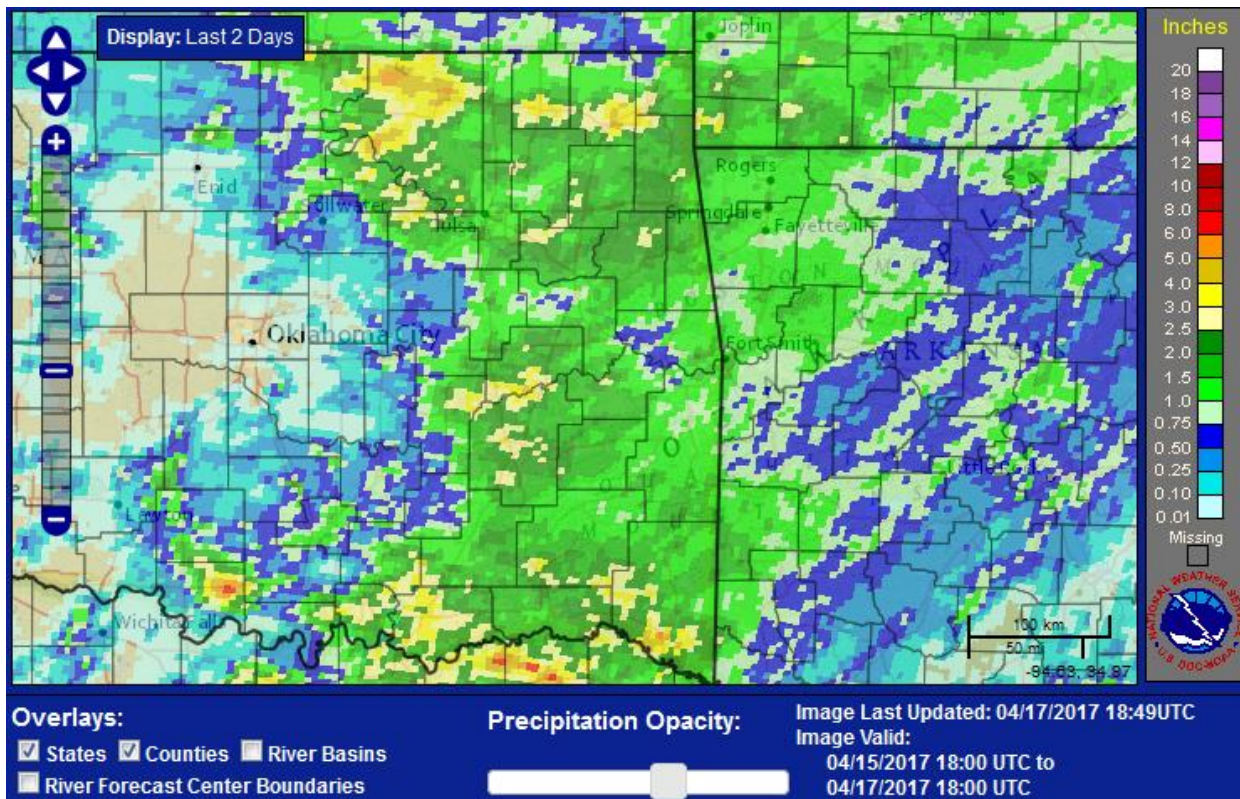


Fig. 7. 48-hour Estimated Observed Rainfall ending at 1pm CDT 4/17/2017.

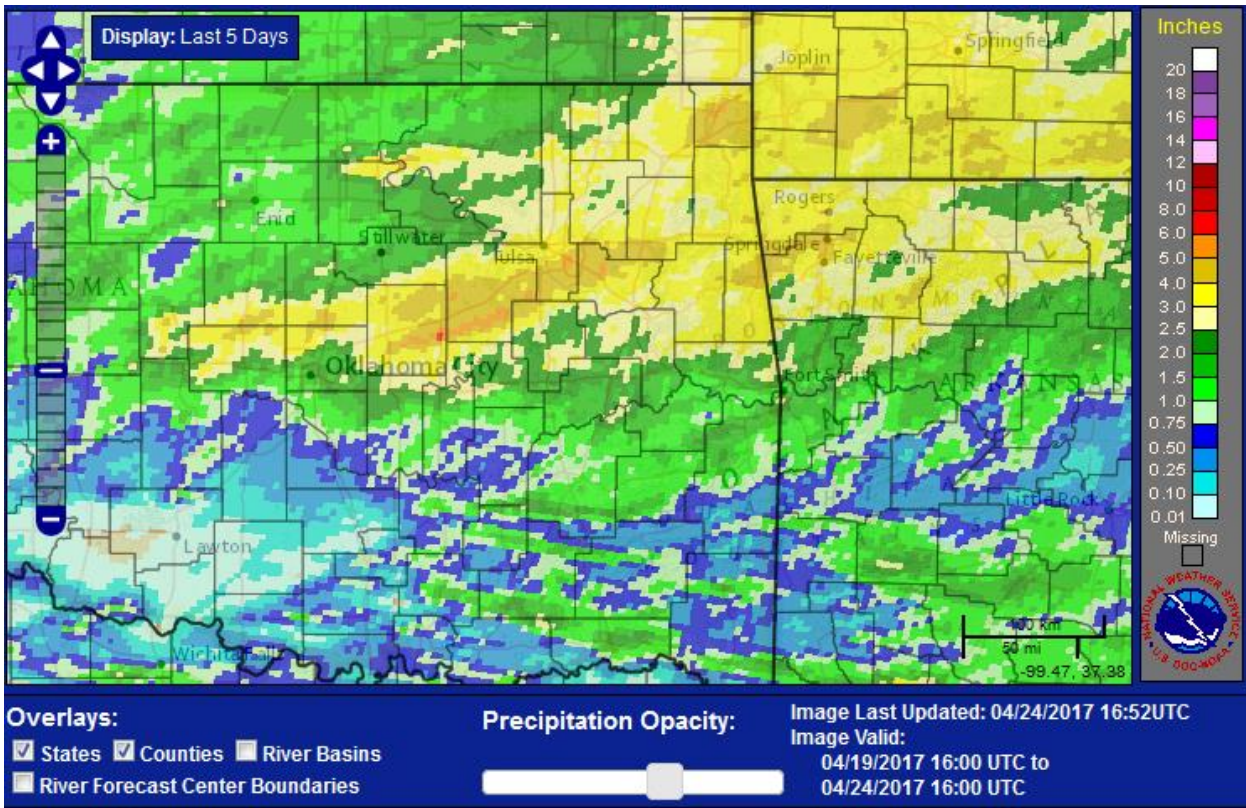


Fig. 8. 5-day Estimated Observed Rainfall ending at 12pm CDT 4/24/2017.

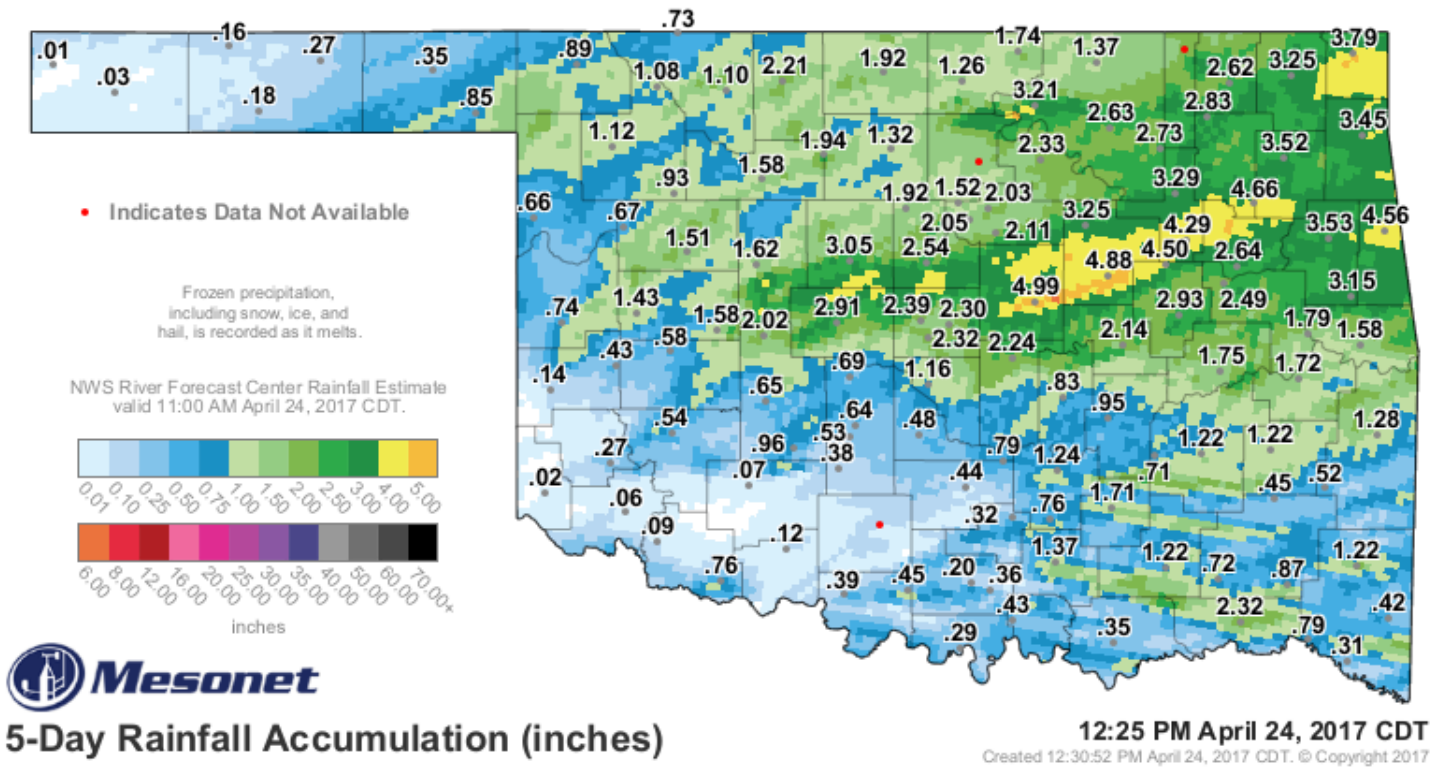


Fig. 9. 5-Day Estimated Observed Rainfall (image) and OK Mesonet measurements ending at 12:25 pm CDT 04/24/2017.

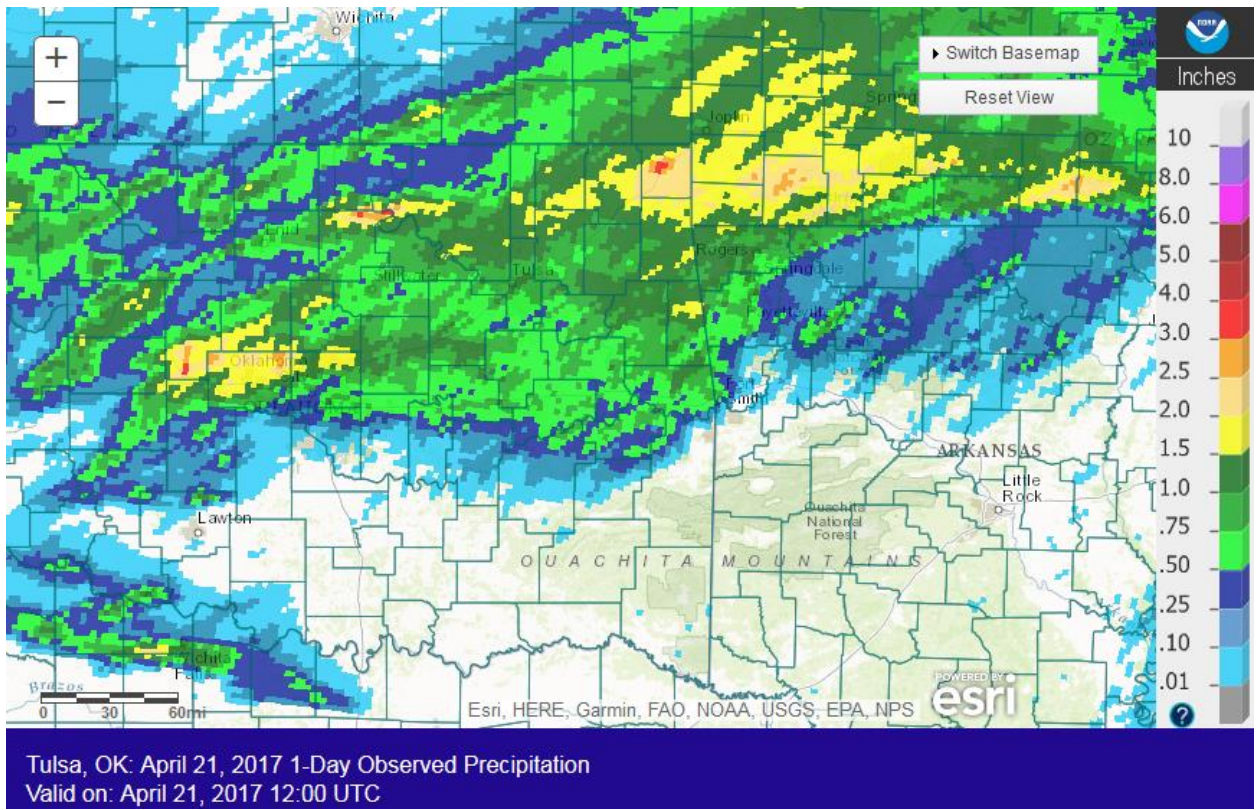


Fig. 10. 24-hour Estimated Observed Rainfall ending at 7am CDT 4/21/2017.

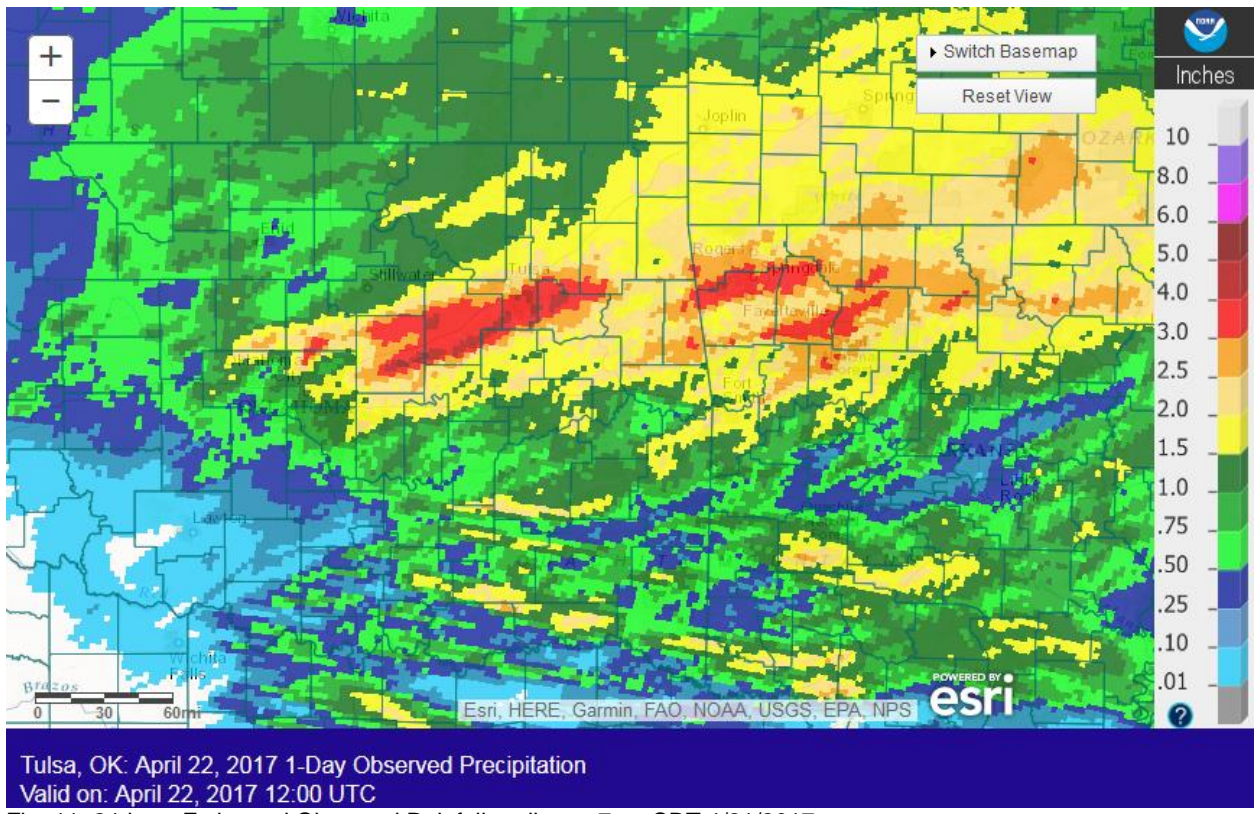


Fig. 11. 24-hour Estimated Observed Rainfall ending at 7am CDT 4/21/2017.

A frontal boundary sagged south into northeast OK early on the 20th, with widely scattered convection along the boundary developing around sunrise. This activity continued over northeast OK and northwest AR until early evening. The main event then began to unfold during the late evening as isentropic lift increased to the north of the front, which stalled out near I-40. Widespread showers and thunderstorms developed north of the boundary and affected all but far southeast OK through the overnight and early morning hours. As this area of

rain pushed eastward, a second wave of rain was expanding over northeast OK around sunrise on the 21st. By mid-morning, the surface warm front was located from just south of McAlester to southern Sebastian County, and widespread moderate to heavy rain continued north of I-40. A complex of storms became more organized over the Oklahoma City metro area and moved east into east central OK and west central AR at midday. This line of storms quickly moved east by midafternoon, while a third round of showers and thunderstorms developed near the I-44 corridor in northeast OK in response to an approached upper-level trough. This activity spread eastward, with widespread moderate to heavy rain affecting locations between the I-44 and I-40 corridors through the evening hours. Isolated strong to severe thunderstorms also developed across southeast OK and congealed into a line of storms that moved east across southeast OK. All of this activity finally came to an end shortly after midnight. Rainfall totals for the two days of rain were 1" to 6" north of I-40 and 0.25" to 2" south of I-40. The hardest hit area was along the I-44 corridor south to I-40, where 2.5" to 6" of rain occurred (Figs. 8-11). The repeated rounds of heavy rain resulted in flash flooding, including in the Tulsa metro area, and minor to moderate river flooding along the Illinois River, Bird Creek, Caney River, Polecat Creek, and Neosho River (see E3 Report for details; preliminary hydrographs available at the end of this report).

Some of the larger 48-hour precipitation reports (in inches) ending at 7am April 22, 2017 included:

Broken Arrow 3NNW, OK	5.03	Broken Arrow 7ENE, OK	4.94	Tulsa 9SE, OK	4.89
Bristow 4SSE, OK	4.88	Bixby 3NE, OK	4.80	Glenpool 0.5NW, OK	4.77
Broken Arrow 3.4ESE, OK	4.72	Inola 3SSE, OK	4.65	Tulsa 12.2SE, OK	4.64
Lock & Dam 18, OK	4.63	Broken Arrow 4.2SE, OK	4.58	Hindsville 10NNE, AR	4.56
Westville 5WNW, OK	4.55	Hectorville 4W, OK	4.50	Tulsa 8S, OK	4.49
Springdale 6.4WSW, AR	4.48	Broken Arrow 2.7, OK	4.46	Bixby 2ENE, OK	4.29
Fayetteville 5.2NNE, AR	4.20	Fayetteville 1E, AR	4.17	West Siloam Springs, AR	4.08

On the evening of the 25th, a cold front moved into eastern OK. Thunderstorms developed along and just ahead of the front during the evening, and quickly developed into a line of storms. The line of storms began to affect northwest AR around midnight, and continued until the pre-dawn hours. These storms produced wind damage, large hail to baseball size, and four tornadoes. Three tornadoes developed in Mayes County, OK during the late evening of the 25th. These tornadoes developed on the leading edge of a bowing line segment that translated across the county. The fourth tornado moved across the Holiday Island area of Carroll County Arkansas a little after midnight. Additional information about these tornadoes can be found at <http://arcg.is/2m0UfGi>). A few hours before sunrise of the 26th, the storms over east central OK reintensified as an upper-level wave approached from the southwest. By sunrise, a line of showers and thunderstorms stretched from southern Pittsburg Co. OK to Springdale, AR. The line progressed east and was mostly east of the NWS Tulsa area shortly after noon. Much of eastern OK and northwest AR received 0.75" to 1.5" of rain, with isolated areas of 1.5" to 3". However, an area from near McAlester, OK to Washington and Madison Counties in AR received widespread 2.5"-4" of rain (Figs. 12, 13). Widespread flash flooding occurred in this area, especially in the Fayetteville area and across Washington and Madison Counties. This heavy rain, on the heels of the previous heavy rain event, resulted in minor to moderate flooding along the Illinois River, Arkansas River at Van Buren, and Lee Creek (see E3 Report for details; preliminary hydrographs available at the end of this report).

Some of the larger 48-hour precipitation reports (in inches) ending at 7am April 27, 2017 included:

Fayetteville 3NE, AR	3.65	Springdale 6.4WSW, AR	3.39	Lock & Dam 15, OK	3.37
Stigler 4WNW, OK	3.32	Viney Grove 2.4NW, AR	3.20	Hindsville 10NNE, AR	3.14
Fayetteville 1E, AR	3.10	Sallisaw 0.3SE, OK	2.97	Fayetteville Drake Field, AR	2.93

From the late afternoon of the 27th through the early morning hours of the 28th, showers and isolated thunderstorms moved repeatedly over northeast OK and northwest AR, primarily north of Hwy 412, as a mid-level shortwave moved across the plains. Rainfall totals ranged from a few hundredths to around 0.75" in far northeast OK and far northwest AR.

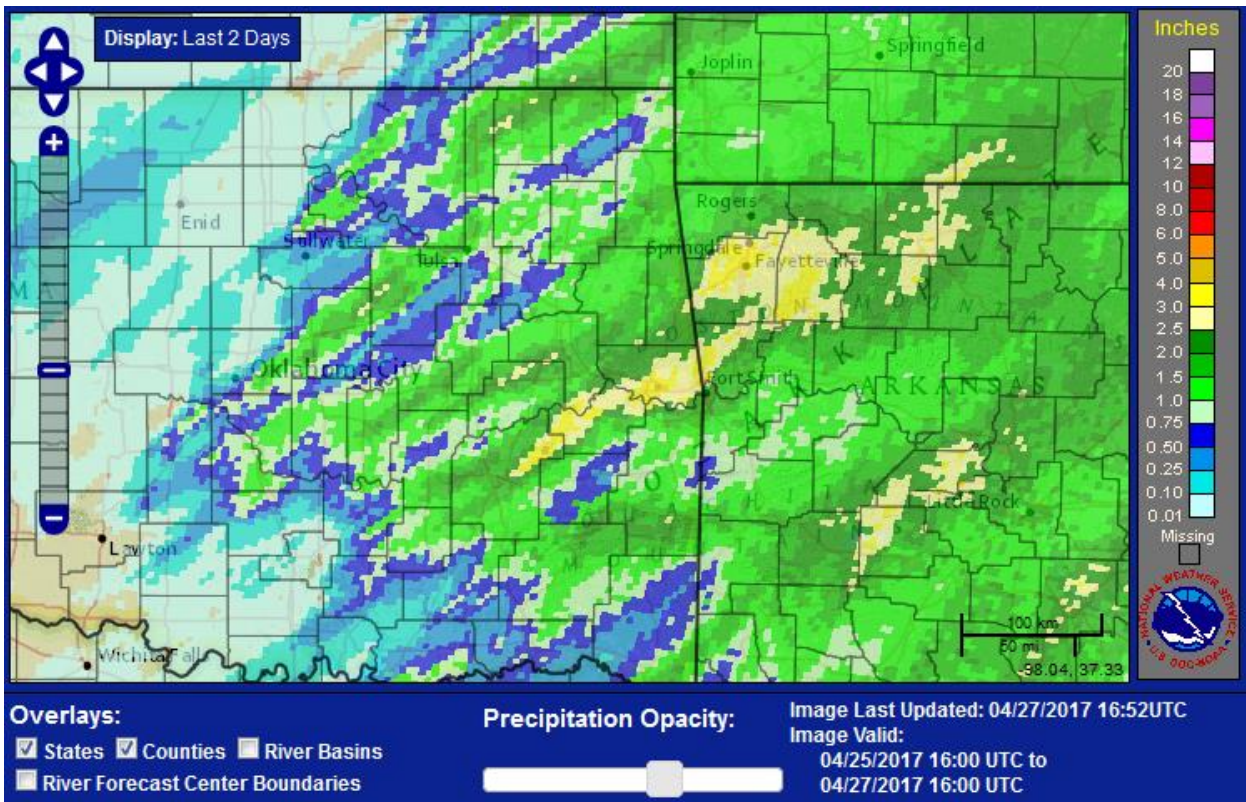


Fig. 12. 2-day Estimated Observed Rainfall ending at 11am CDT 4/27/2017.

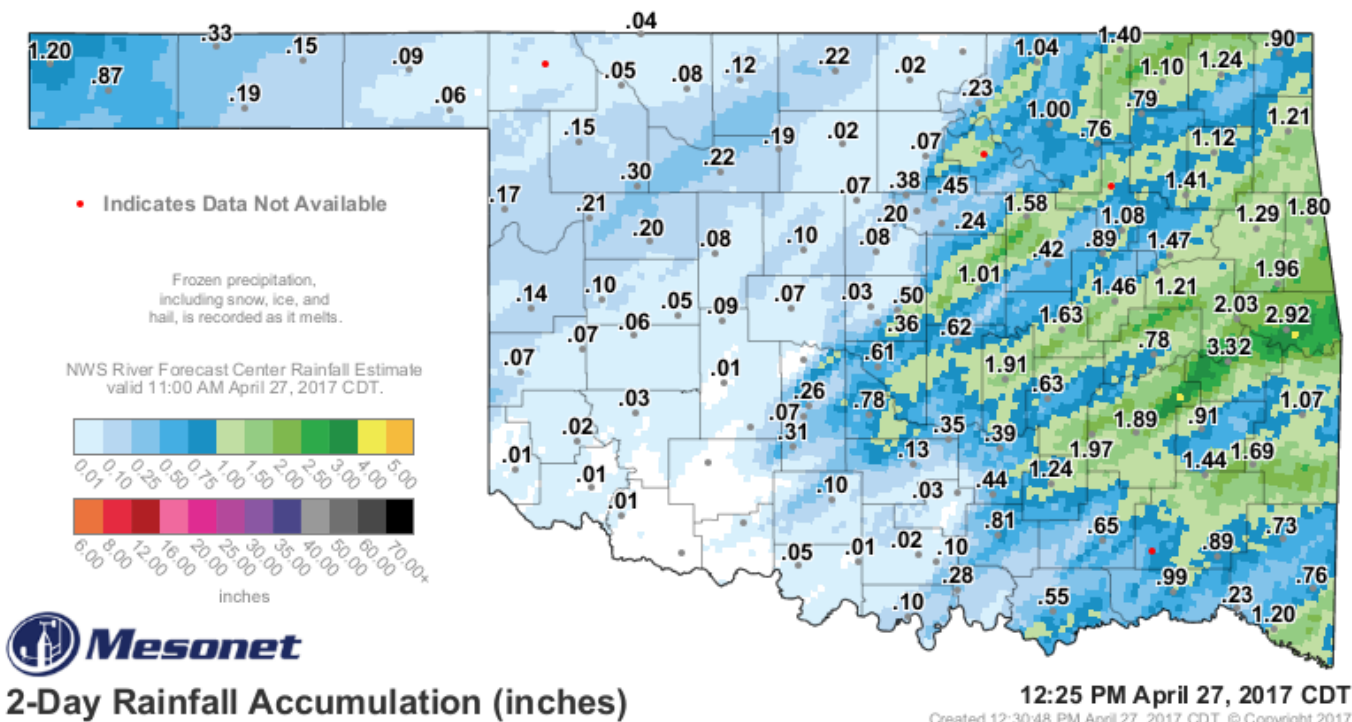


Fig. 13. 2-Day Estimated Observed Rainfall (image) and OK Mesonet measurements ending at 12:25 pm CDT 04/27/2017.

A significant flooding and heavy rain event then began during the late evening hours of the 28th. A warm front lifted north out of TX, with storms developing over eastern OK and northwest AR as the low-level jet strengthened. Deep and moist southwesterly upper-level flow in advance of an approaching upper-level trough was nearly parallel to the synoptic frontal system. With precipitable water values running near 2 inches (above the 90th percentile for this time of year), numerous periods of very heavy rain affected across the region from late on the 28th through the early morning hours of the 30th. All but Pushmataha and Choctaw Counties in southeast OK received over 1" of rain during this event, with a large portion of eastern OK and northwest AR getting 3"-4" of rain. The highest totals were over east central OK and far northwest AR, where 5"-12" of rain fell (Figs. 14-17). The NWS Hydrometeorological Design Studies Center determined that the highest 6-hour rainfall total near the Muskogee/Haskell County line (along the Canadian River between Lake Eufaula and the Arkansas River) was a rare event with only a 0.2%-0.1% chance of occurring in a given year (i.e. a 500-1,000 year event) (Fig. 19). The highest 48-hour rainfall totals across portions of Benton and Washington Counties in northwest AR ranged from 2%-0.5% chance of occurring in a given year (i.e. a 50-200 year event) (Fig. 20). All of this rain, on top of what had fallen in the 10 days prior, resulted in significant flash flooding and record river flooding. Sadly, flash flooding claimed the lives of 6 people, a 73-year-old female near Wilburton, OK (vehicle); a 76-year-old male in Washington County AR (vehicle); two young children in Madison County AR (vehicle); a girl in Springdale, AR (fell in a creek); and a 24-year-old female in Eureka Springs, AR (inner-tubing).

5"-8" of rain fell over most of the Illinois River basin from east central OK into northwest AR. Initially, extreme flash flooding affected the area, hampering preparedness activities in advance of the expected major river flooding. A life-long resident and state official from the area stated that he had never seen flash flooding that bad before in the Tahlequah and Illinois River areas. Soon after the flash flood waters receded, the Illinois River began rising. For the third time since April 2011, a new record was set along the Illinois River near Watts, when the river crested at 30.16' (preliminary). The previous record of 28.64' was recently set in December 2015. Major and near record flooding occurred downstream at Chewey (31.95' preliminary; record 32.35' Dec. 2015) and near Tahlequah (29.35' preliminary; record 30.69' Dec. 2015). Major and near record flooding also occurred along the Flint Creek near Kansas (18.31' preliminary; record 19.42' June 1974), and along the Baron Fork near Eldon (25.10' preliminary; record 28.51' Apr. 2011). State Highway 10 was inundated, and many secondary roads near the river were severely damaged from both the flash flooding and river flooding. The Illinois River experienced three floods in less than a two week time period. Major flooding also occurred along the Spring River near Quapaw in far northeast OK and along Lee Creek near Van Buren in west central AR. In total, 19 NWS river forecast points exceeded flood stage during this event (Fig. 18). Please refer to the E3 Report for details. Preliminary hydrographs are available at the end of this report. In addition to the flooding, severe weather also occurred with this storm system. One EF-2 and two EF-1 tornadoes affected southeast OK and west central AR, along with wind damage and large hail (a 2.75" hailstone was reported). Additional information about these tornadoes can be found at <http://arcg.is/2m0UfGi>. A major disaster declaration was approved by FEMA for this event.

Some of the larger 72-hour precipitation reports (in inches) ending at 5pm April 30, 2017 included:

Rogers 2SW, AR	10.59	Elm Springs, AR	10.12	Farmington, AR	9.10
Viney Grove 2NW, AR	9.00	Busch 3SSW, AR	8.88	Tenkiller Ferry Dam, OK	8.45
Bentonville, AR	8.30	Cave Springs, AR	8.24	Cave Springs 3NNE, AR	8.13
Berryville, AR	7.94	Oak Hill 1NW, AR	7.73	Harmon 1ENE, AR	7.67
Eureka Springs 4.0NNW, AR	7.56	Tahlequah 2E, OK	7.49	NW AR Regional Airport	7.20
Cherokee City 3NNW, AR	7.13	Kansas 5E, OK	6.90	Lake Eucha Spavinaw, OK	6.88
Beaver 1ESE, AR	6.78	West Siloam Springs, AR	6.33	Fort Gibson 3W, OK	6.01

All of the rainfall this month resulted in Grand Lake, Hudson Lake, and Beaver Lake nearly reaching the top of their flood control pools. Emergency releases were required out of these dams, resulting in Flash Flood Warnings for Dam Releases lasting for several days. Once the emergency releases ceased, dam operators continued to release water to near their regulating stages in order to evacuate the flood control pools throughout the system. It took until June 10, 2017 for the releases out of Pensacola and Hudson Dams to be scaled back significantly. This greatly impacted commerce along the McClellan-Kerr Arkansas River Navigation System since river flows during and following the floods were too high for barge operations. Beaver Lake exceeded the top of its flood control pool, and high releases occurred downstream along the White River.

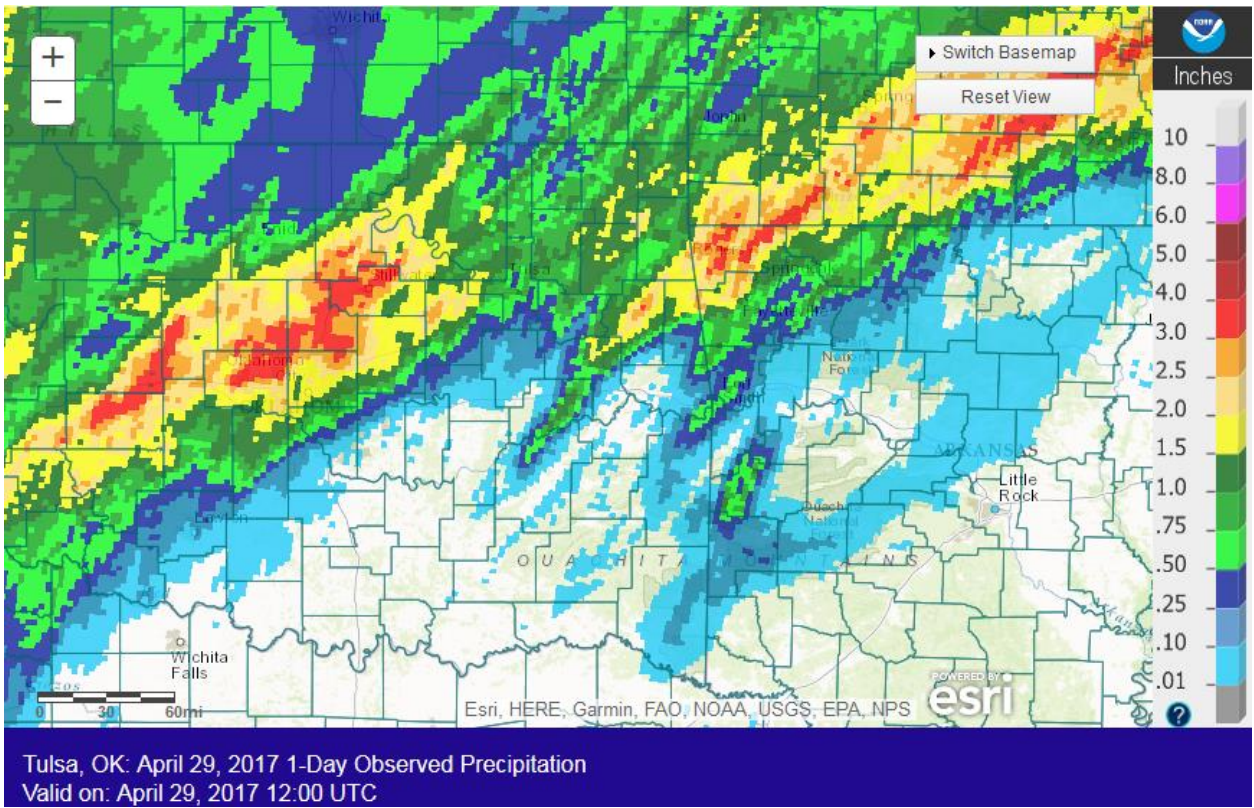


Fig. 14. 24-hour Estimated Observed Rainfall ending at 7am CDT 4/29/2017.

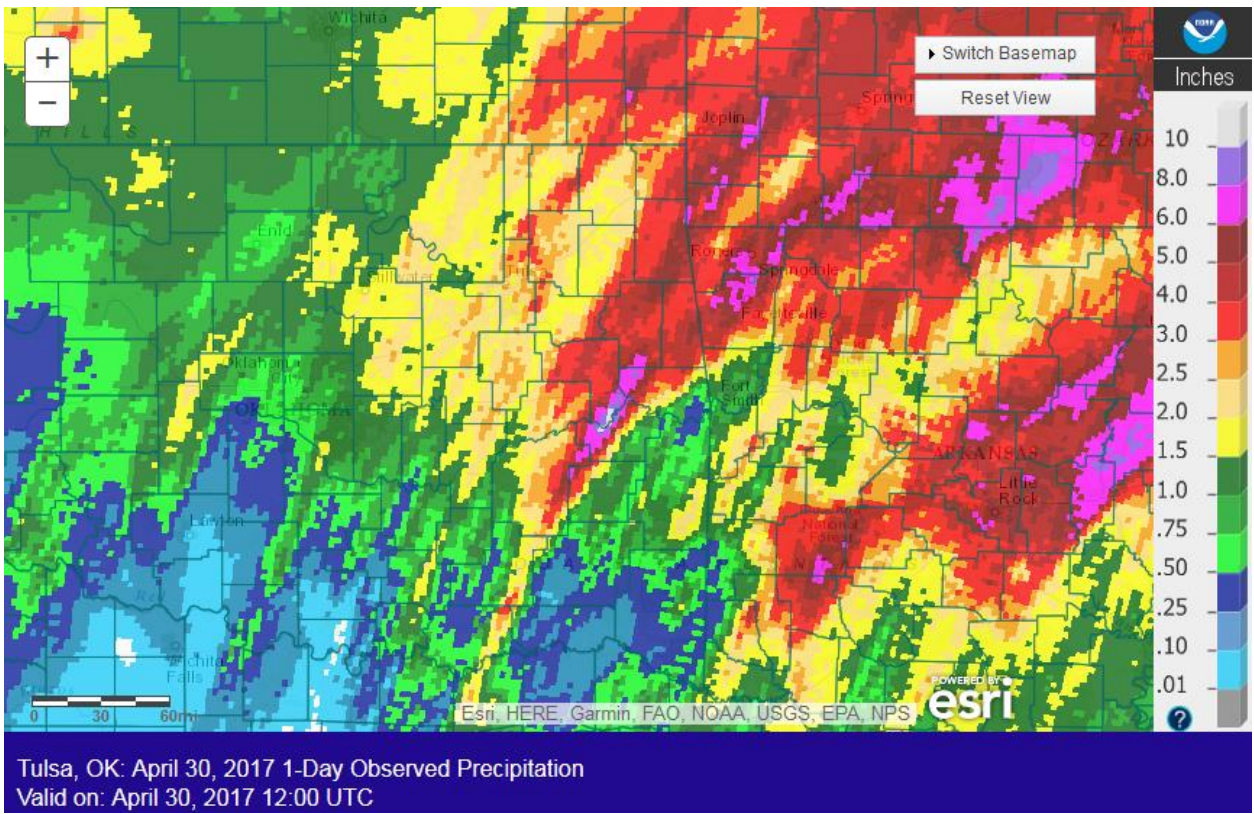


Fig. 15. 24-hour Estimated Observed Rainfall ending at 7am CDT 4/30/2017.

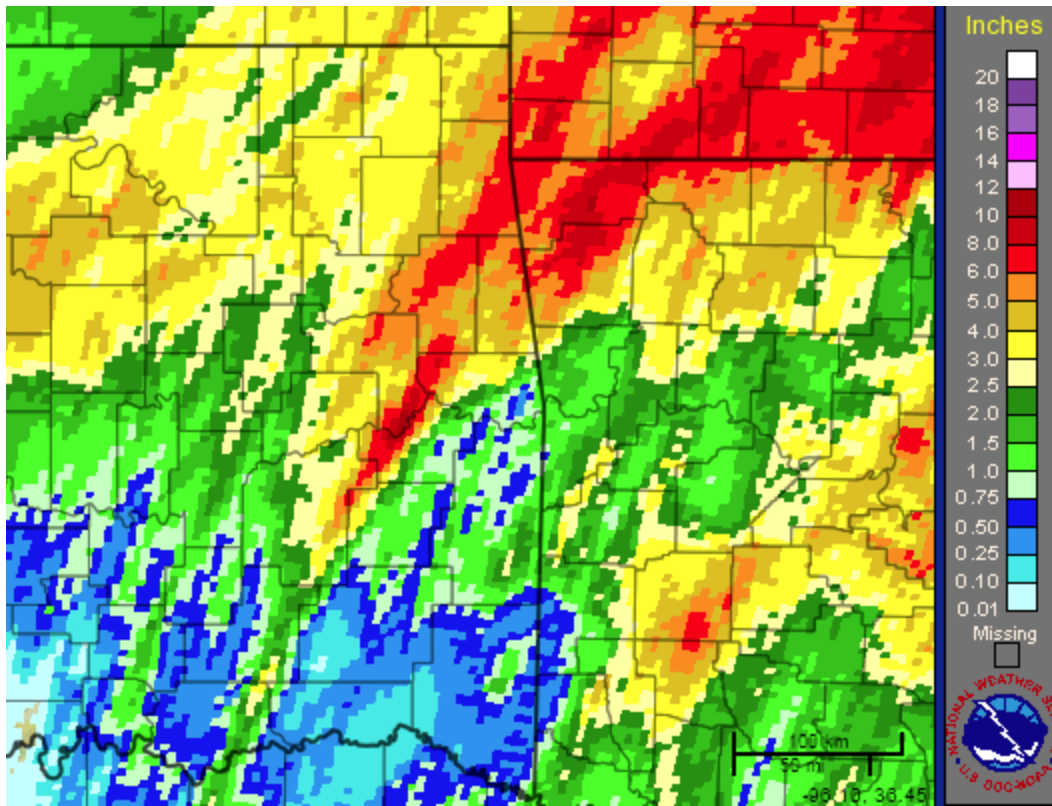


Fig. 16. Storm Total Estimated Observed Rainfall ending on 04/30/2017.

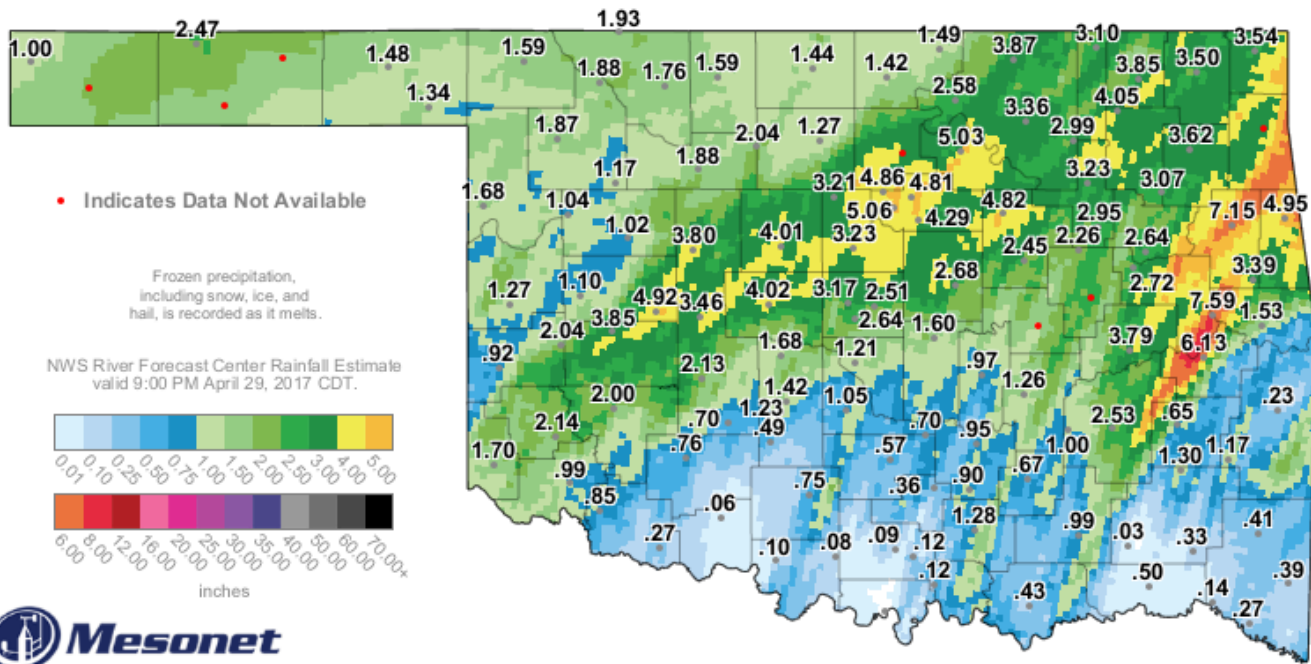


Fig. 17. 2-Day Estimated Observed Rainfall (image) and OK Mesonet measurements ending at 10:30 pm CDT 04/29/2017.

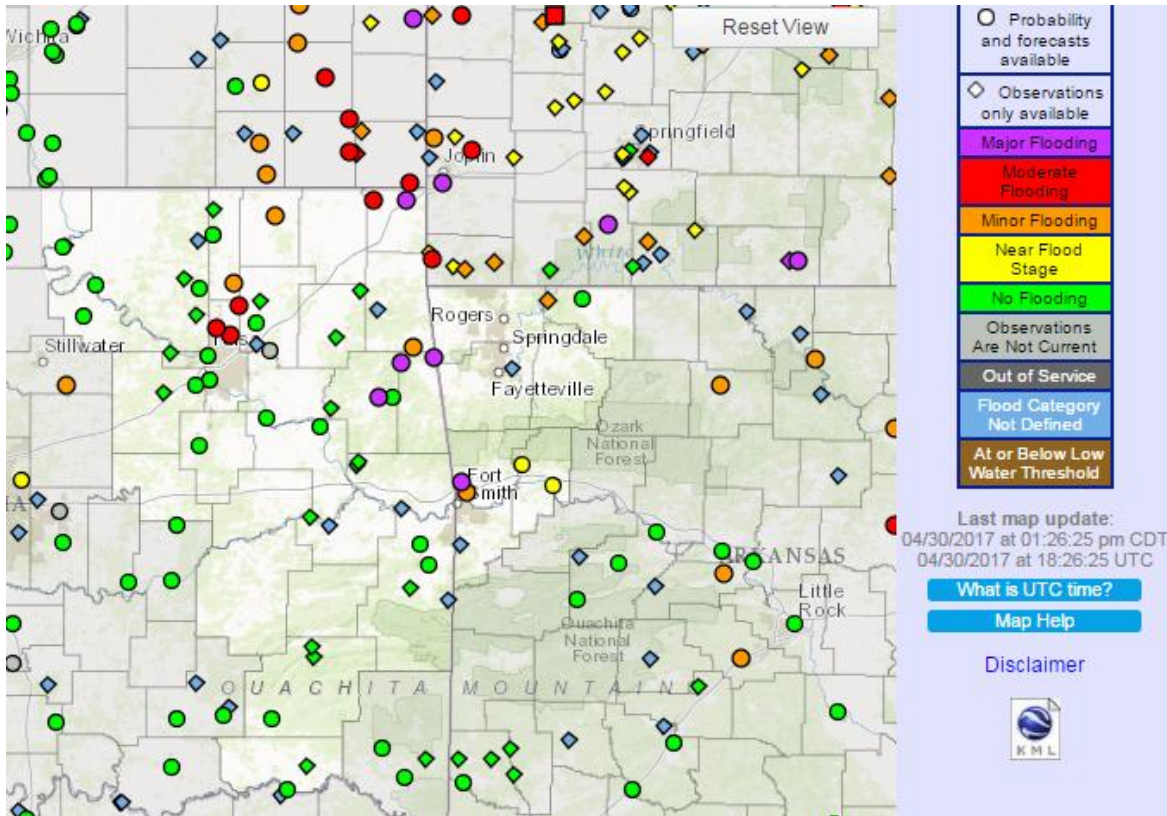


Fig. 18. Observed flood level map as of 1:26 pm CDT 04/30/2017.

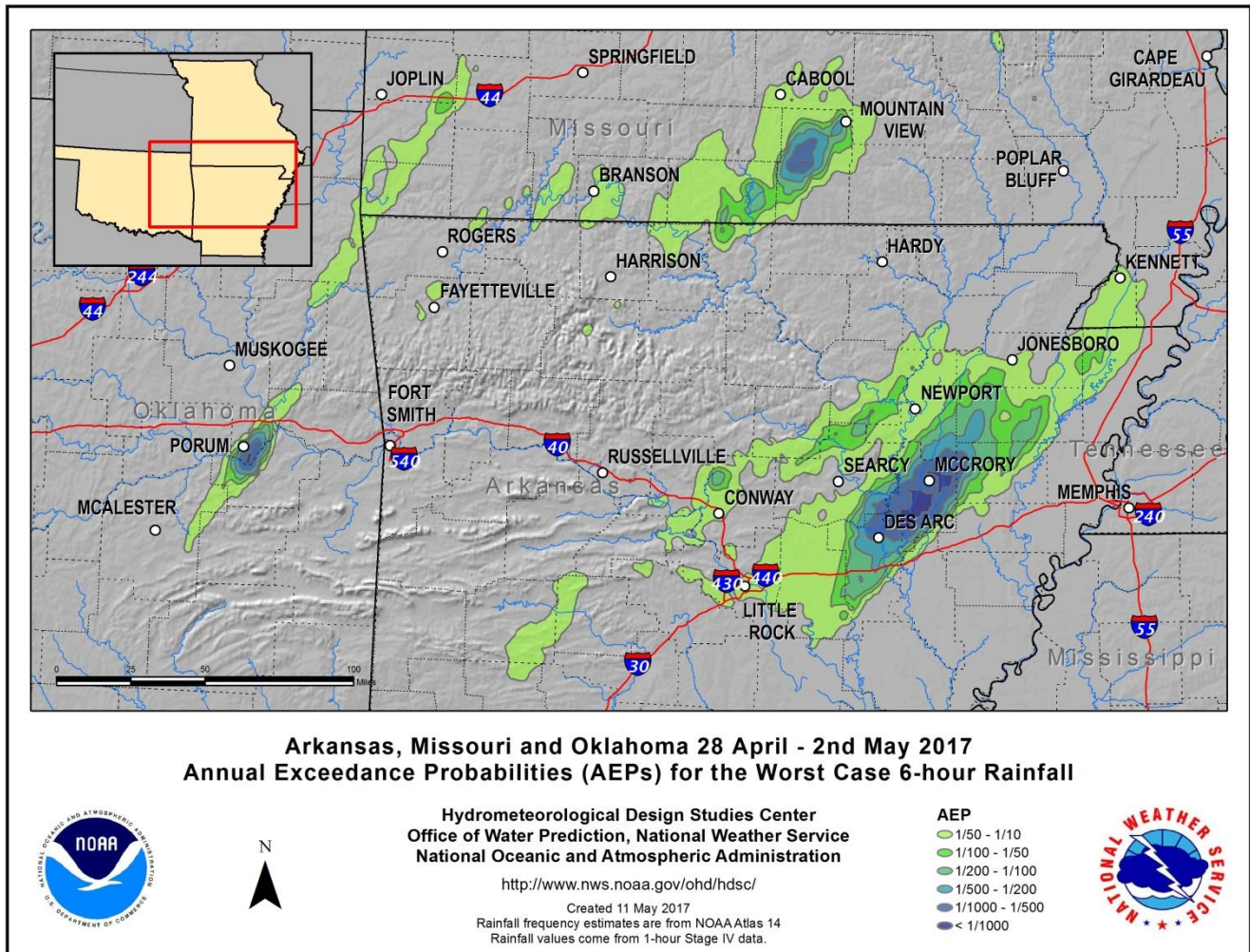


Fig. 19. Annual Exceedance Probabilities for the Worst Case 6-hour Rainfall from April 28-May 2, 2017 as calculated by HDSC.

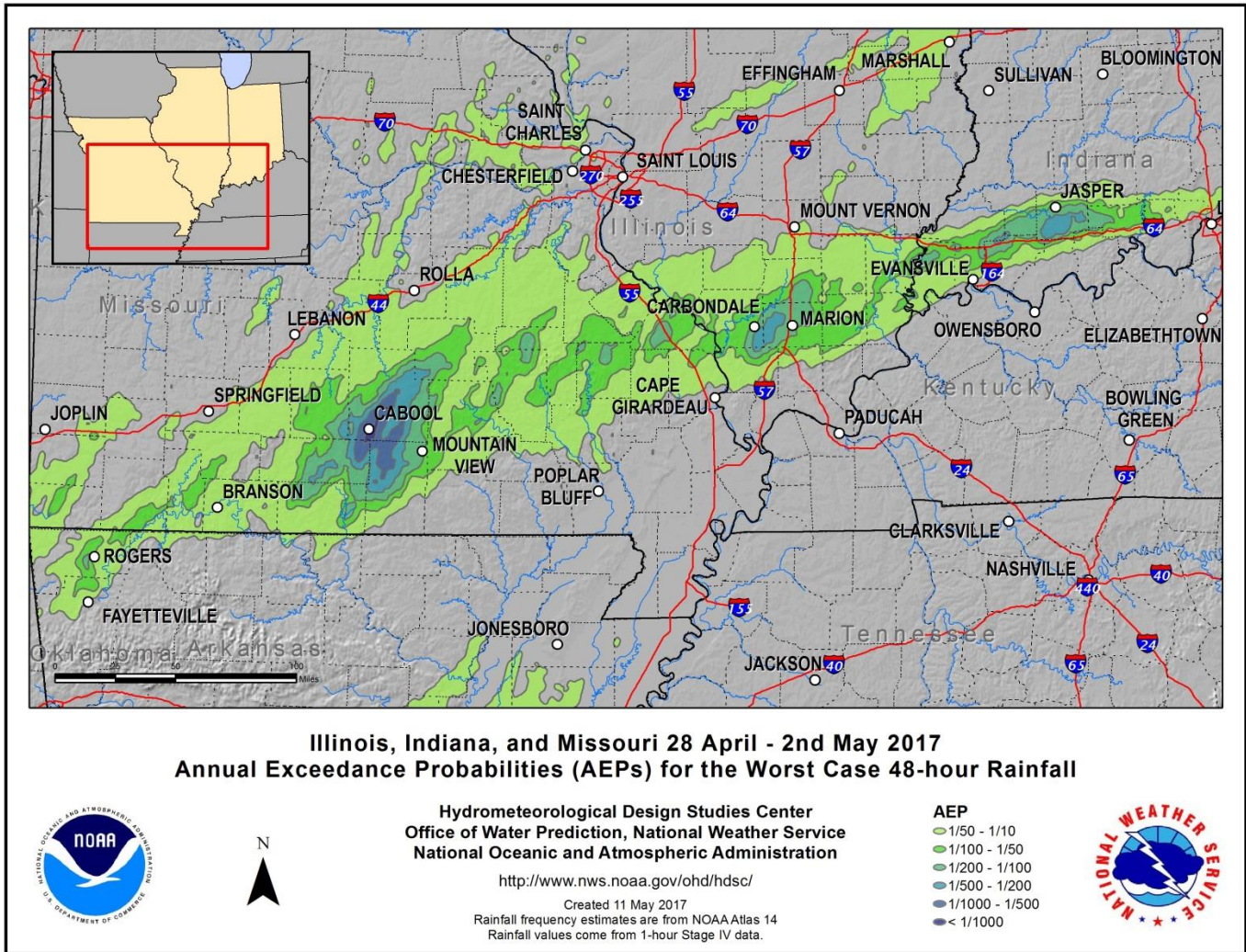


Fig. 20. Annual Exceedance Probabilities for the Worst Case 48-hour Rainfall from April 28-May 2, 2017 as calculated by HDSC.

Written by:

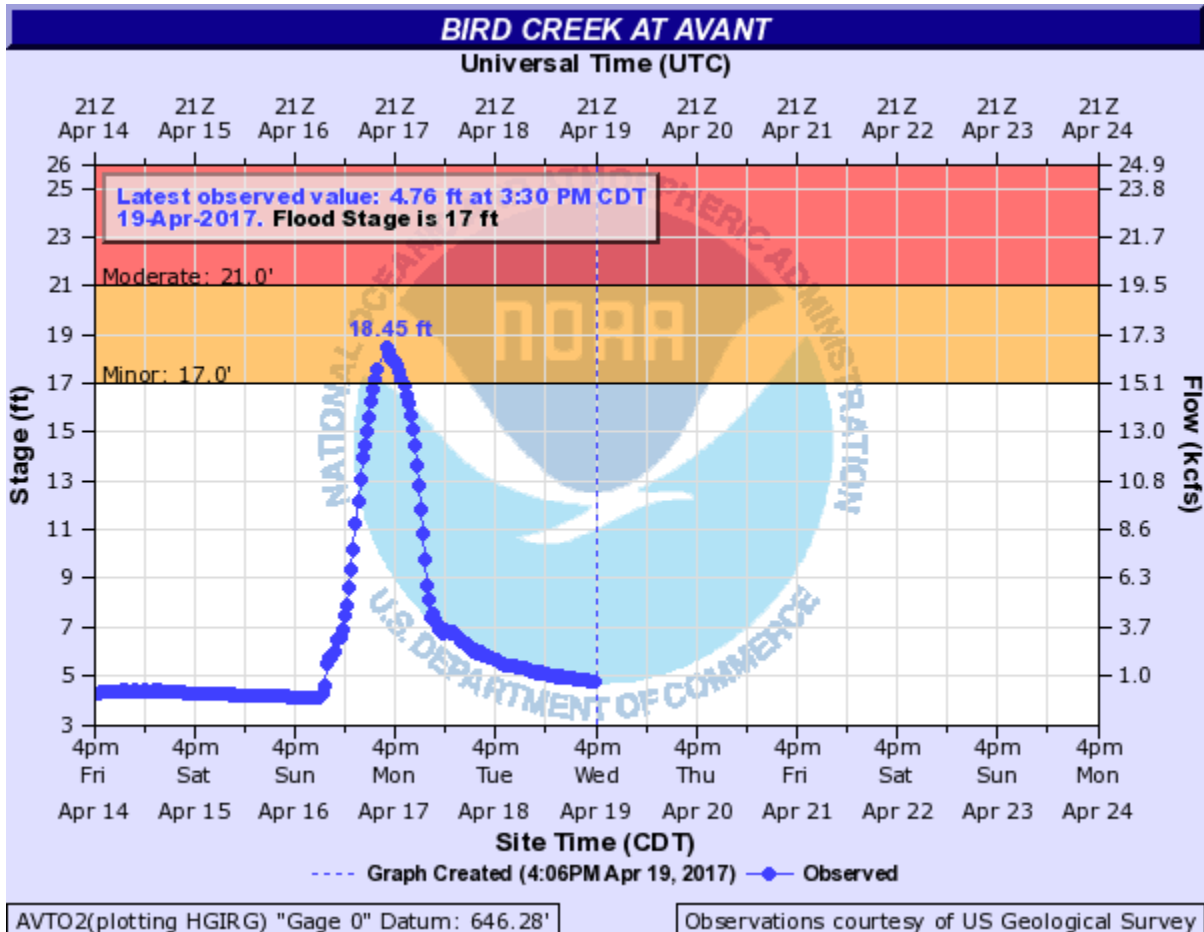
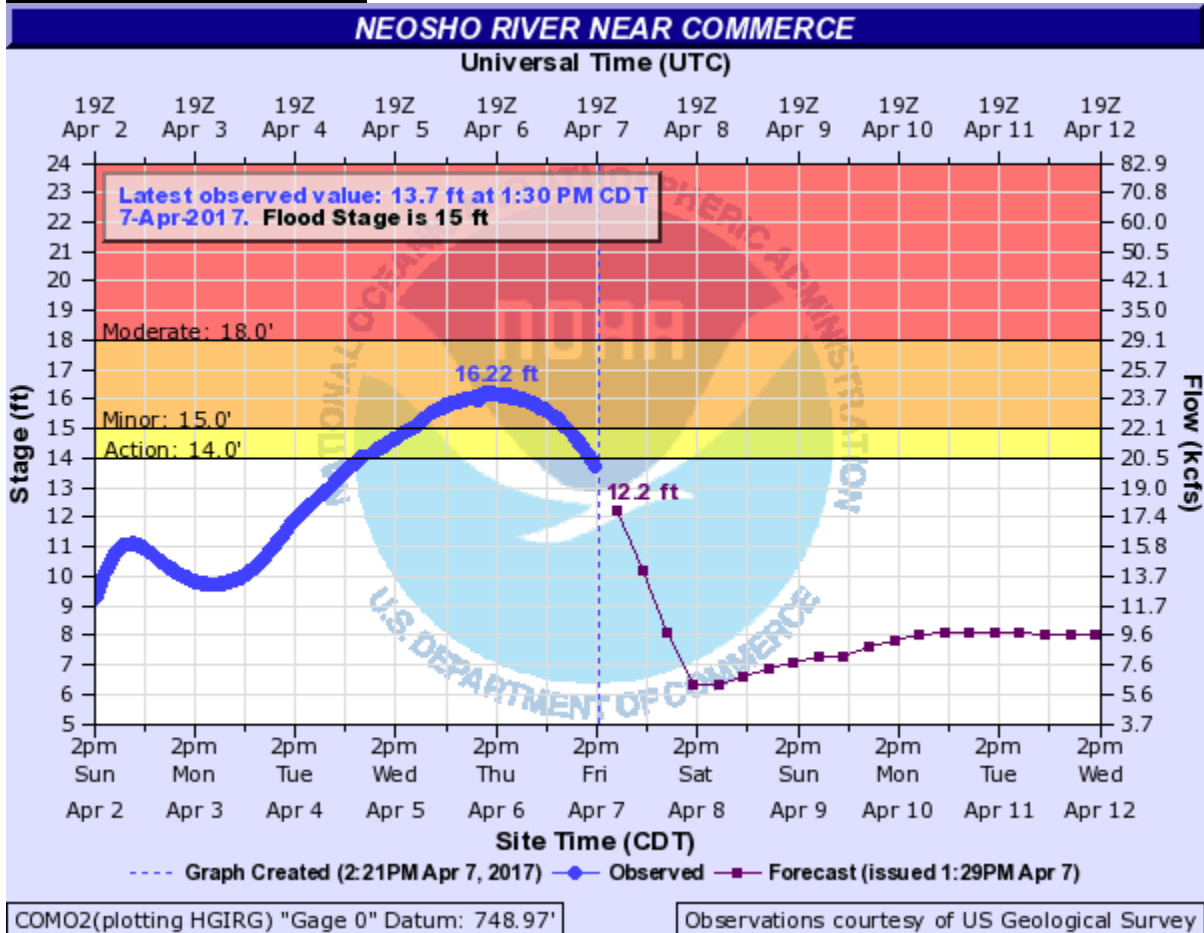
Nicole McGavock
Service Hydrologist
WFO Tulsa

Products issued in April 2017:

- *CWYO2 became a daily river forecast point September 7, 2016
- *MLBA4 and OZGA4 transferred to NWS Tulsa HSA February 5, 2014
- *Mixed case River Flood products began July 31, 2013

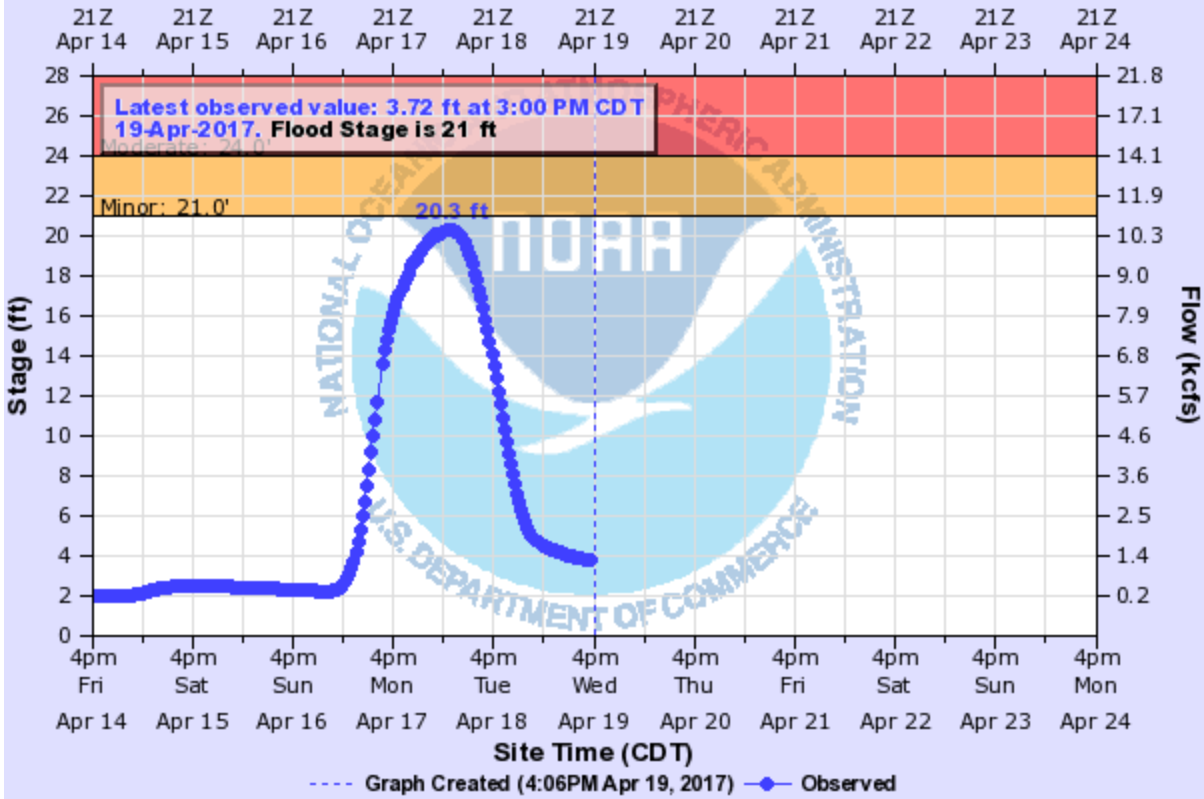
- 24 Flash Flood Warnings (FFW) (4 FFW EXT)
- 17 Flash Flood Statements (FFS)
- 3 Flash/Areal Flood Watches (FFA) (22 Watch FFA CON/EXT/EXA/EXB/CAN)
- 27 Urban and Small Stream Advisories (FLS)
- 11 Areal Flood Warnings (FLW)
- 3 Areal Flood Statements (FLS)
- 63 River Flood Warnings (FLW) (includes category increases)
- 301 River Flood Statements (FLS)
- 12 River Flood Advisories (FLS) (42 Advisory FLS CON/EXT/CAN)
- 0 River Flood Watches (FFA) (0 Watch FFA CON/EXT/CAN)
- 0 River Statements (RVS)
- 0 Hydrologic Outlooks (ESF)
- 1 Drought Information Statements (DGT)

Preliminary Hydrographs:



BIRD CREEK NEAR SPERRY

Universal Time (UTC)

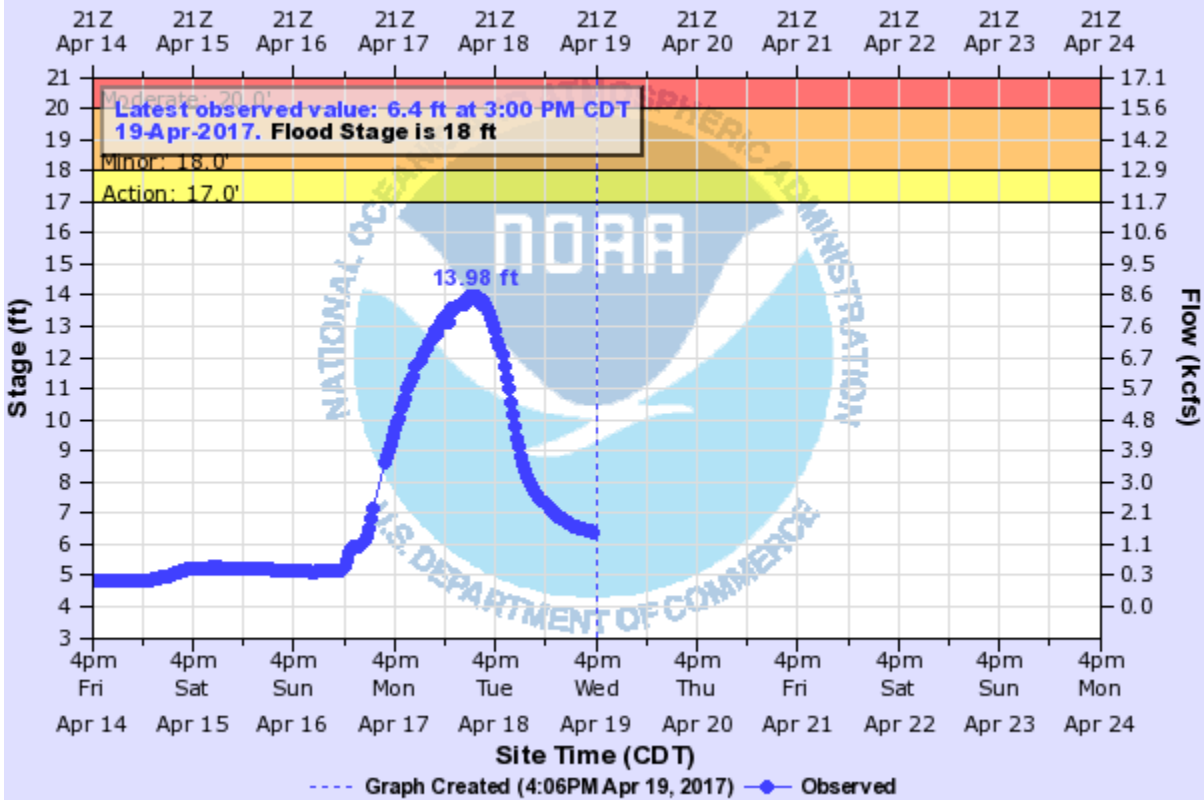


SPEO2(plotting HGIRG) "Gage 0" Datum: 579.43'

Observations courtesy of US Geological Survey

BIRD CREEK NEAR OWASSO

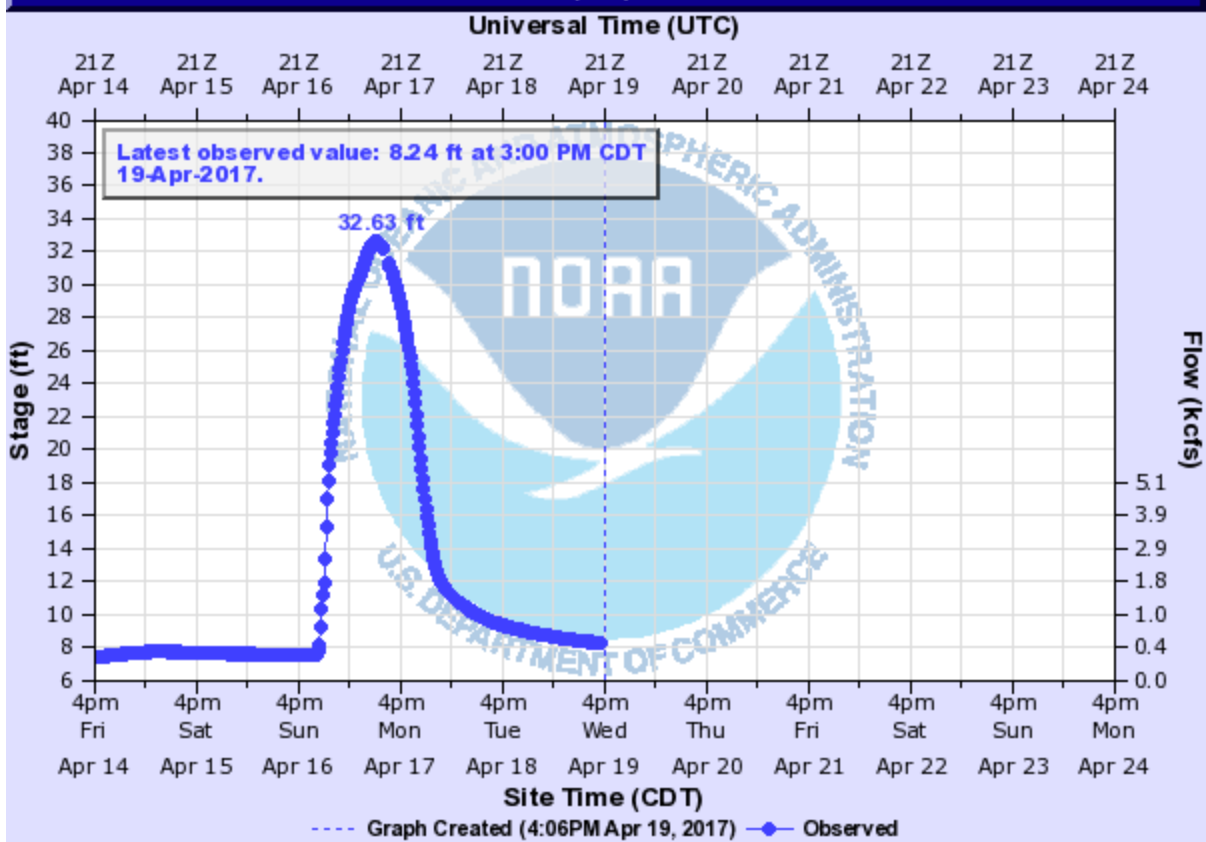
Universal Time (UTC)



OWSO2(plotting HGIRG) "Gage 0" Datum: 560.17'

Observations courtesy of US Geological Survey

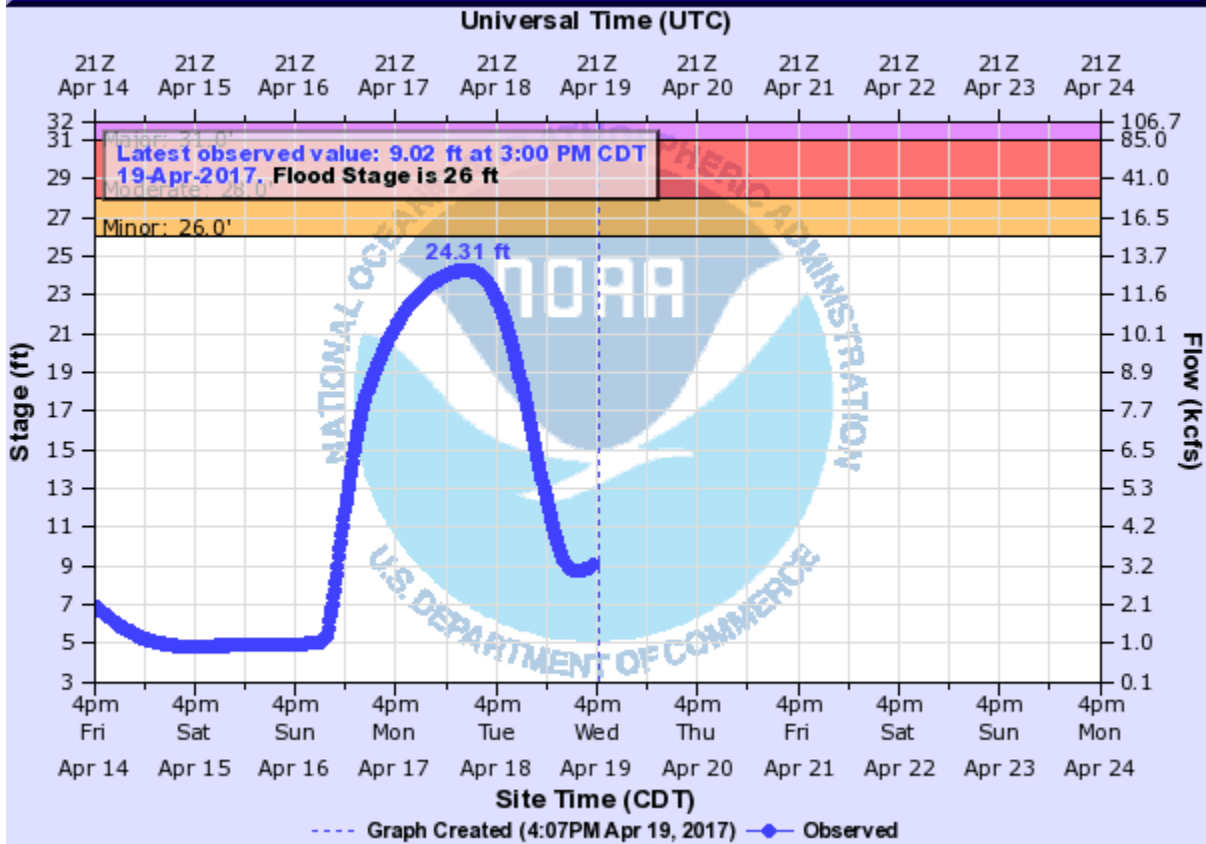
SAND CREEK (OK) NEAR OKESA



OKE02(plotting HGIRG) "Gage 0" Datum: n/a

Observations courtesy of US Geological Survey

CANEY RIVER NEAR RAMONA

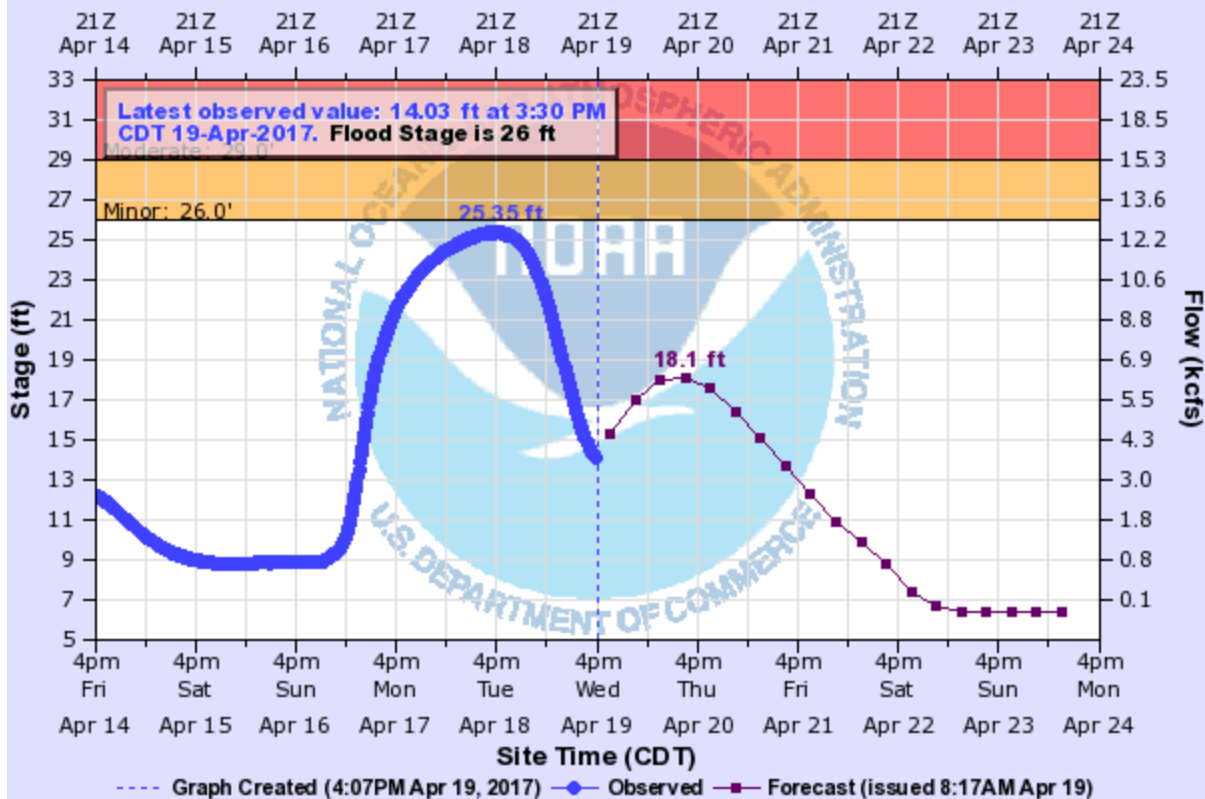


RAM02(plotting HGIRG) "Gage 0" Datum: 586.43'

Observations courtesy of US Geological Survey

CANEY RIVER NEAR COLLINSVILLE

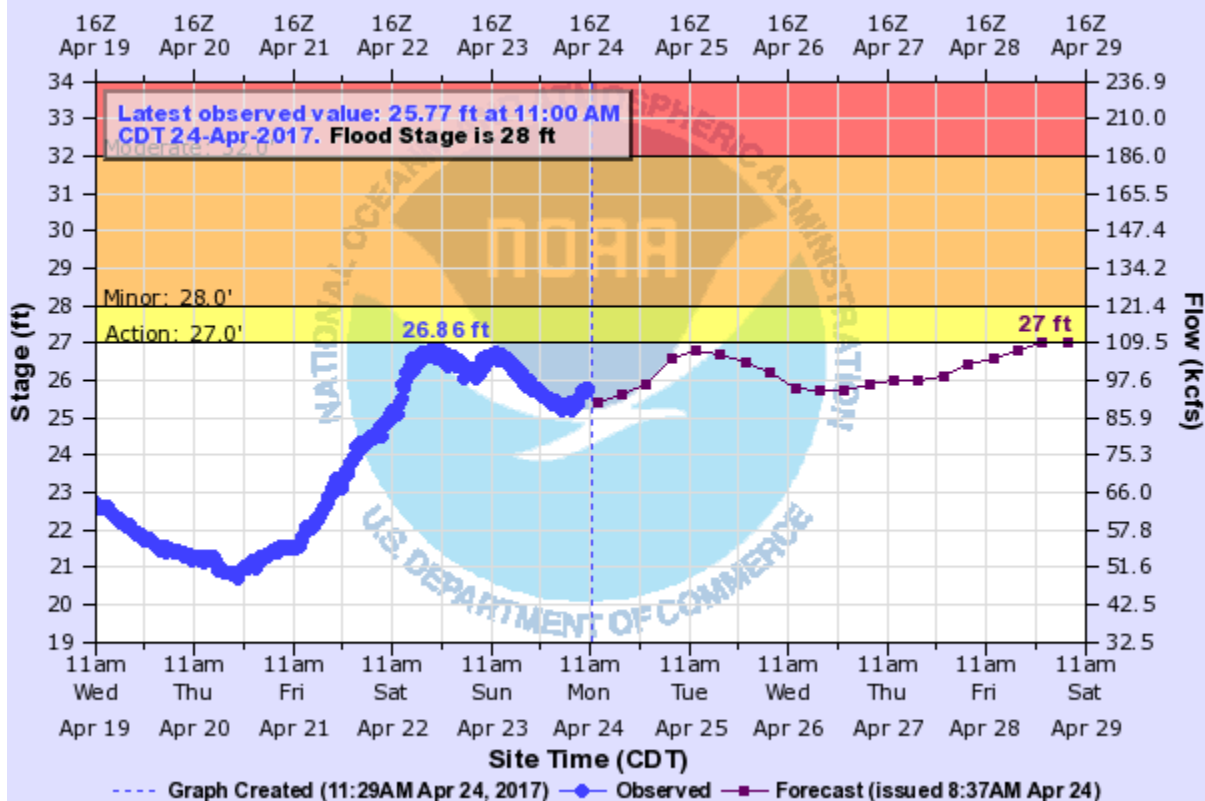
Universal Time (UTC)



CVL02(plotting HGIRG) "Gage 0" Datum: 565.72'

ARKANSAS RIVER NEAR MUSKOGEE

Universal Time (UTC)

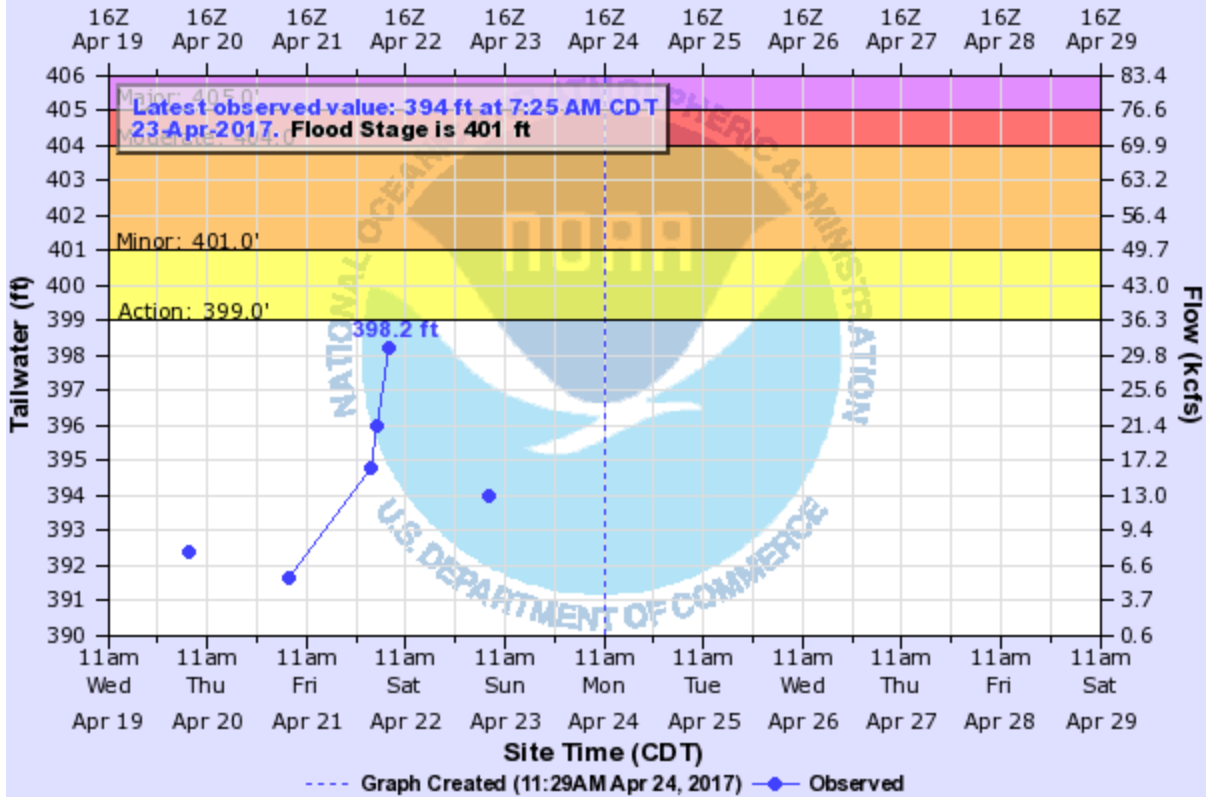


MKGO2(plotting HGIRG) "Gage 0" Datum: 471.38'

Observations courtesy of US Geological Survey

LEE CREEK NEAR VAN BUREN LCR

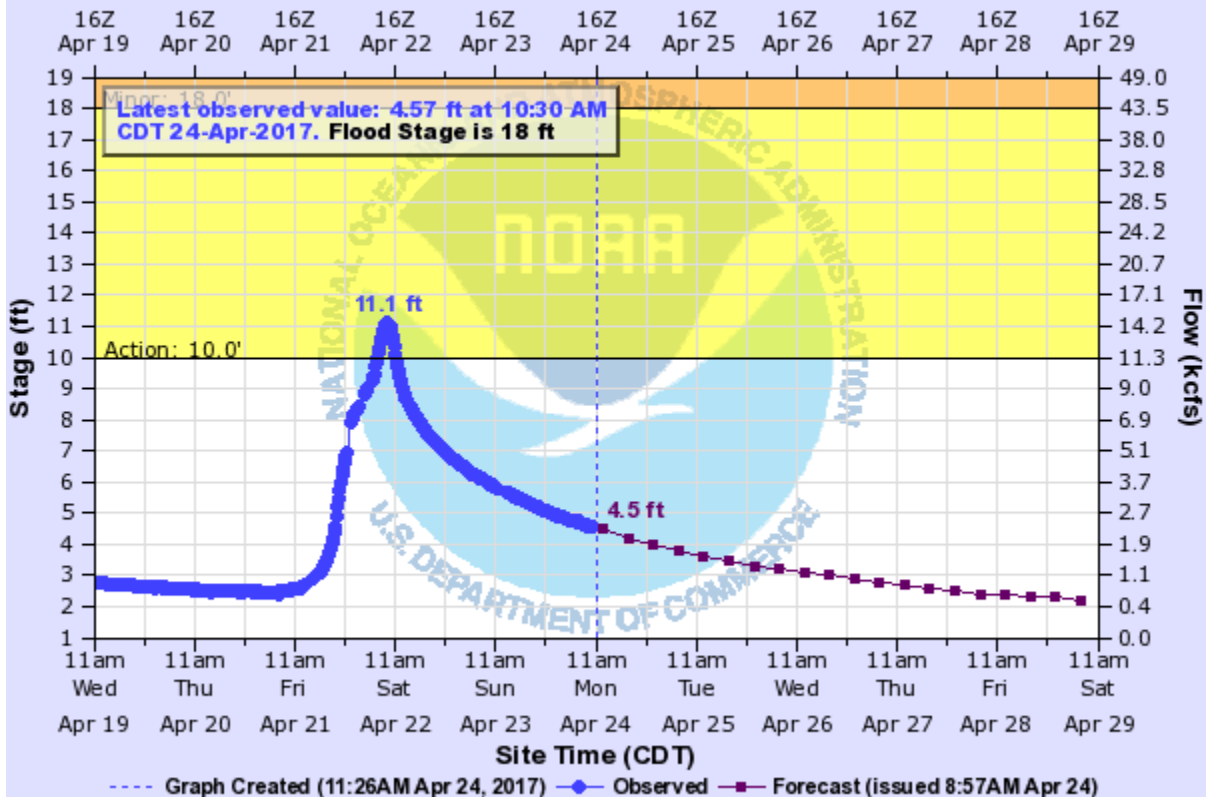
Universal Time (UTC)



VBRA4(plotting HTIRZ) "Gage 0" Datum: 0'

MULBERRY RIVER (AR) NEAR MULBERRY

Universal Time (UTC)

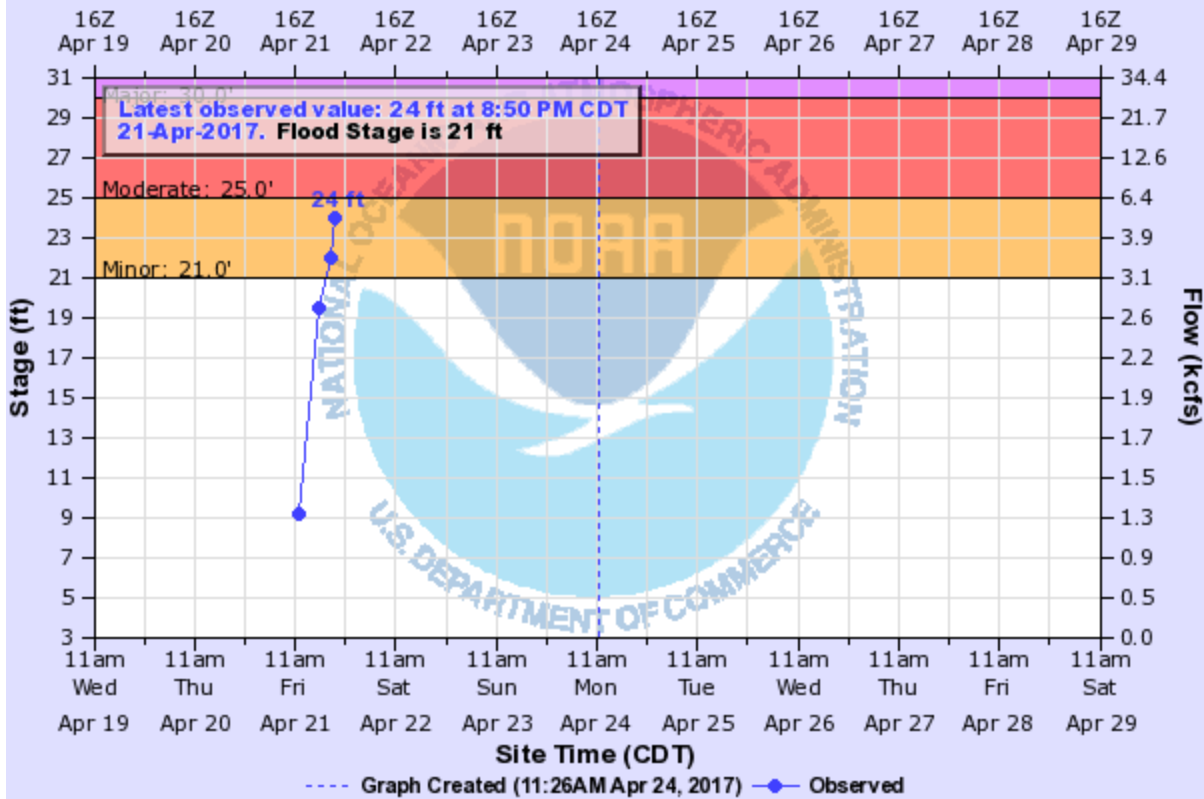


MLBA4(plotting HGIRG) "Gage 0" Datum: 432.75'

Observations courtesy of USGS/USACE/ADEQ

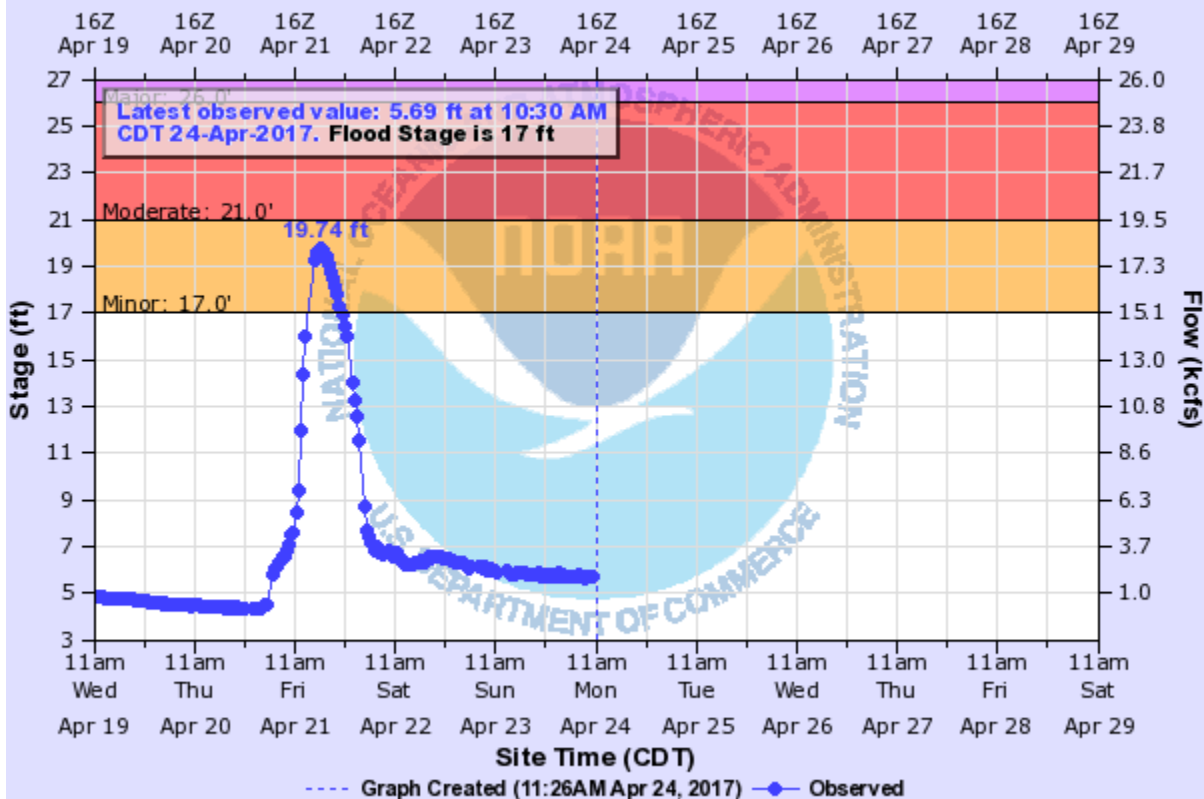
POLECAT CREEK NEAR SAPULPA

Universal Time (UTC)



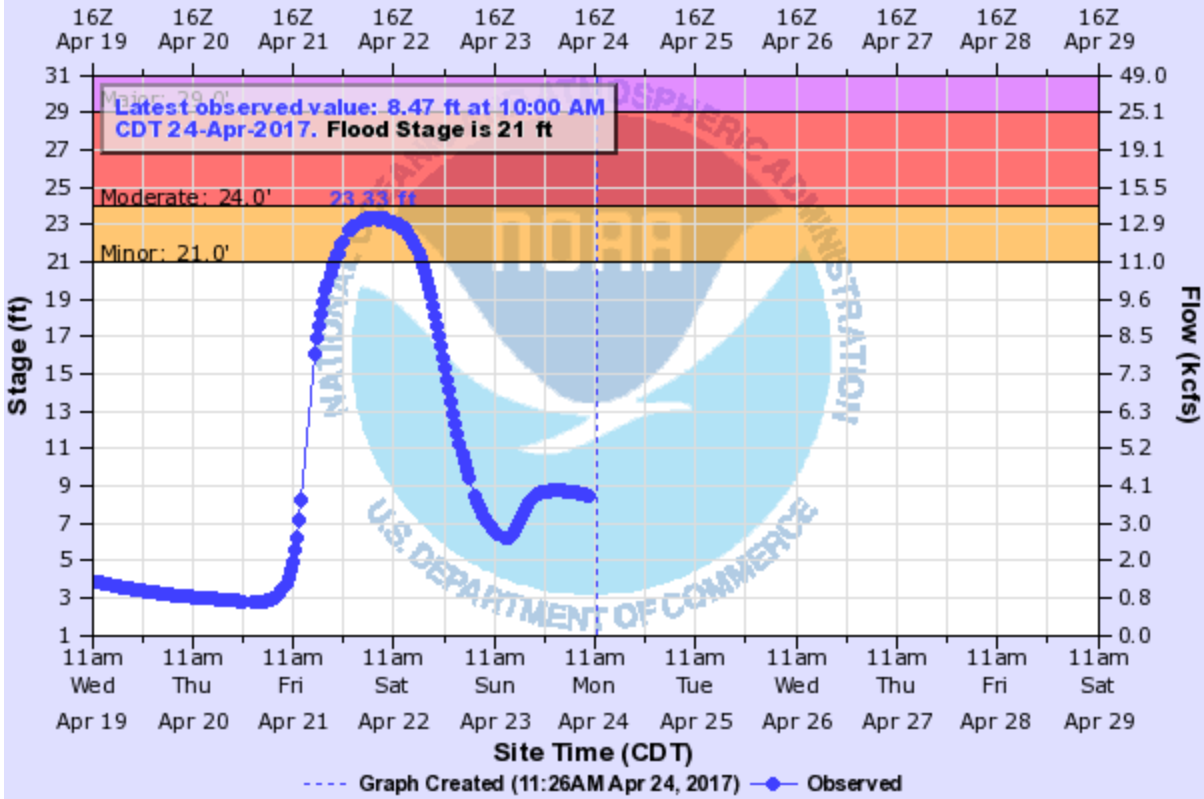
BIRD CREEK AT AVANT

Universal Time (UTC)



BIRD CREEK NEAR SPERRY

Universal Time (UTC)

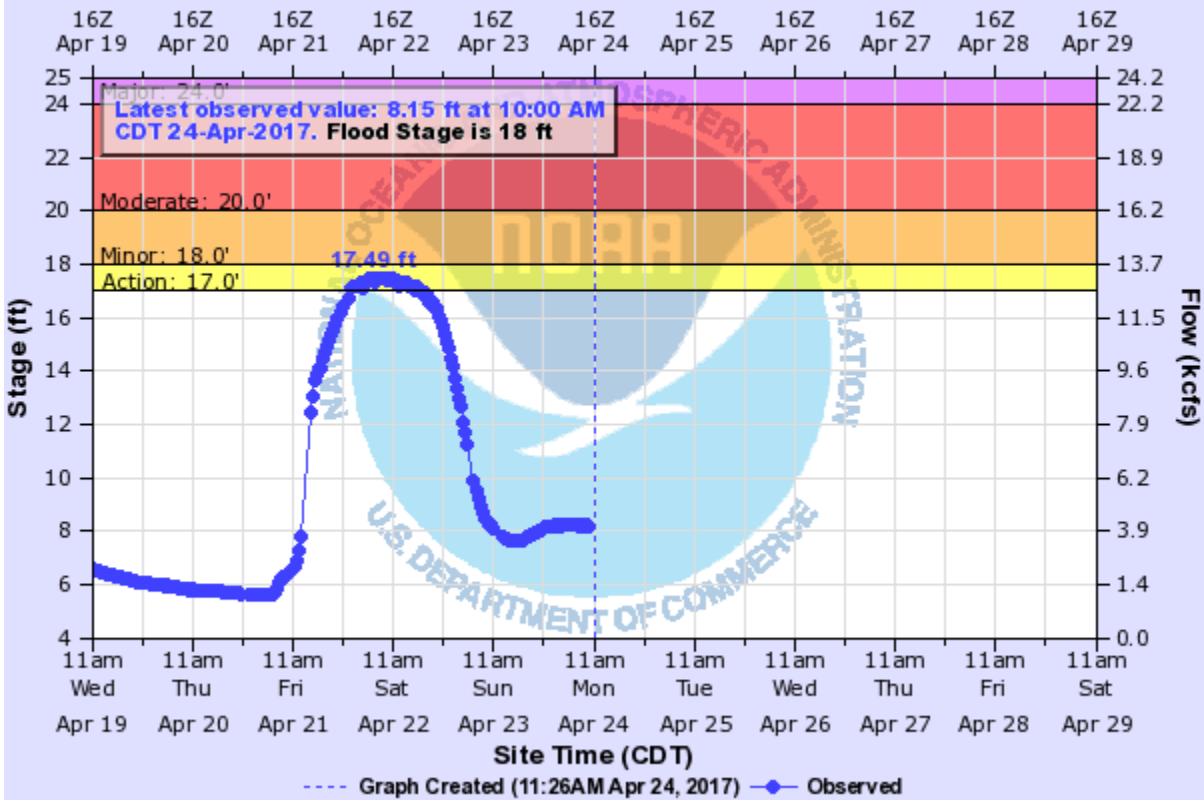


SPEO2(plotting HGIRG) "Gage 0" Datum: 579.43'

Observations courtesy of US Geological Survey

BIRD CREEK NEAR OWASSO

Universal Time (UTC)

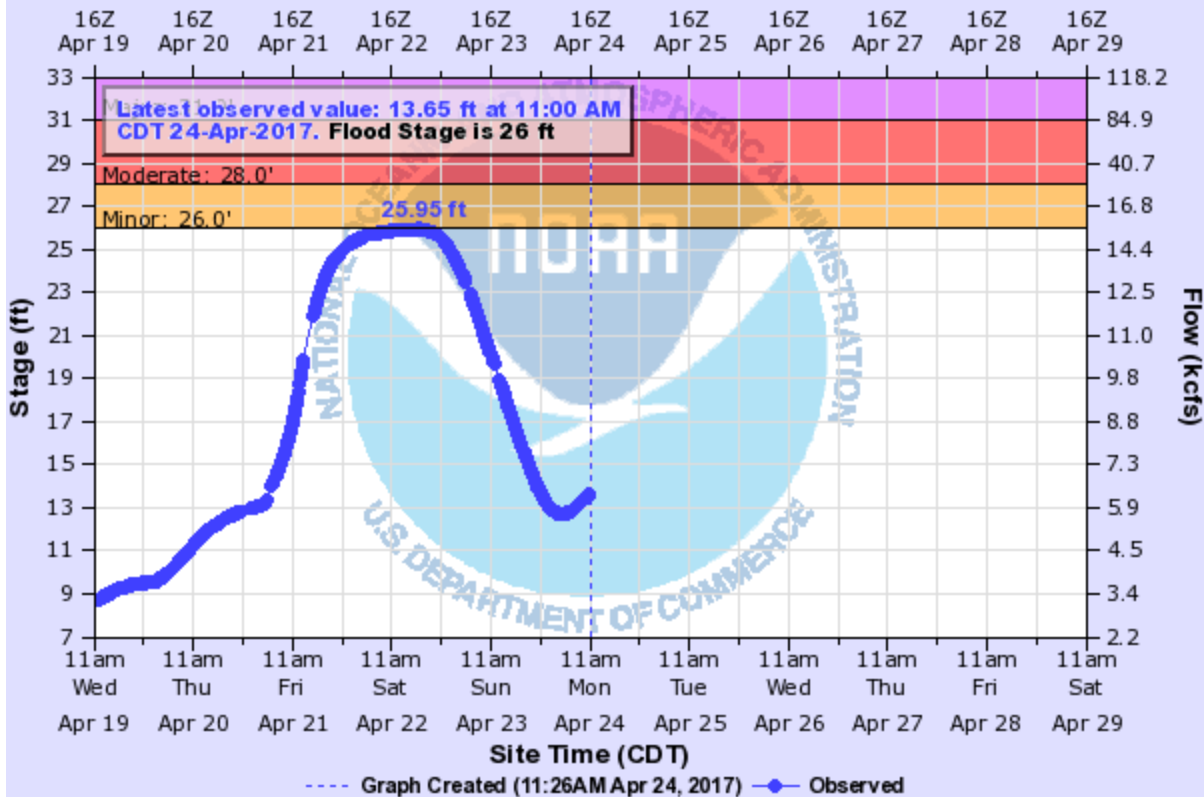


OWSO2(plotting HGIRG) "Gage 0" Datum: 560.17'

Observations courtesy of US Geological Survey

CANEY RIVER NEAR RAMONA

Universal Time (UTC)

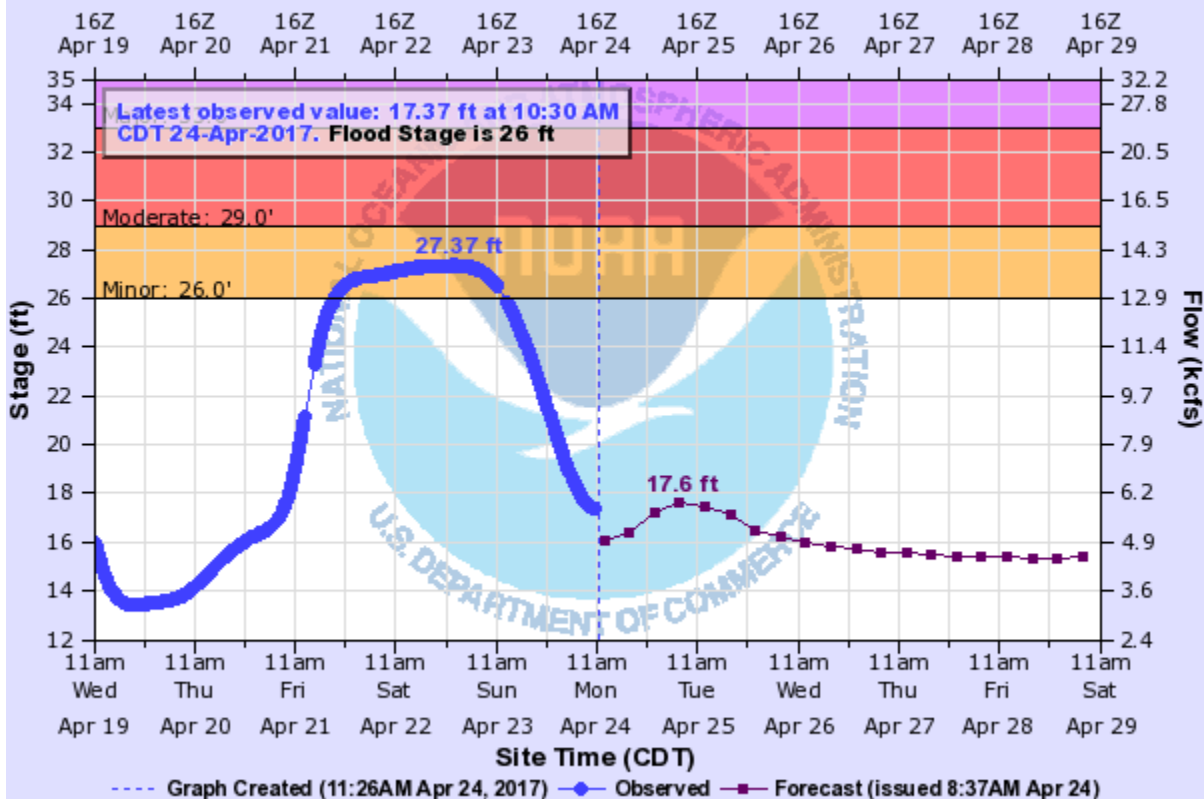


RAMO2(plotting HGIRG) "Gage 0" Datum: 586.43'

Observations courtesy of US Geological Survey

CANEY RIVER NEAR COLLINSVILLE

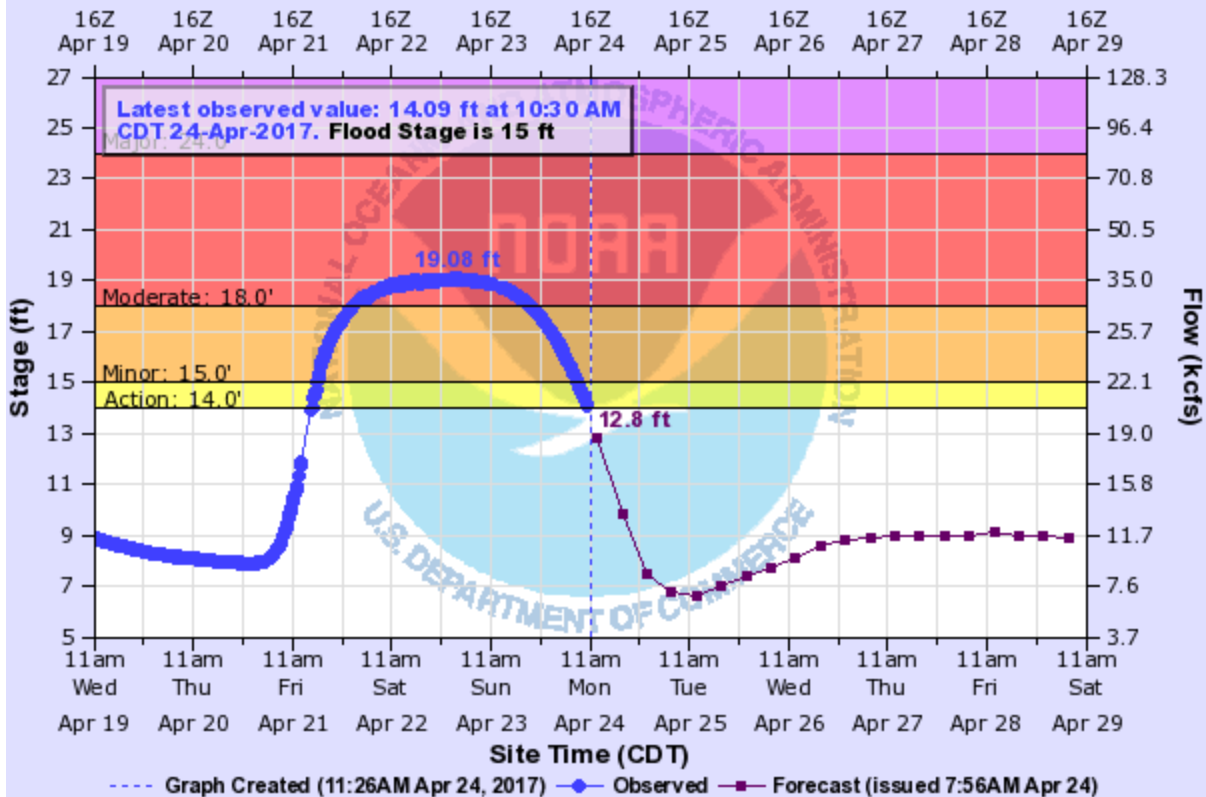
Universal Time (UTC)



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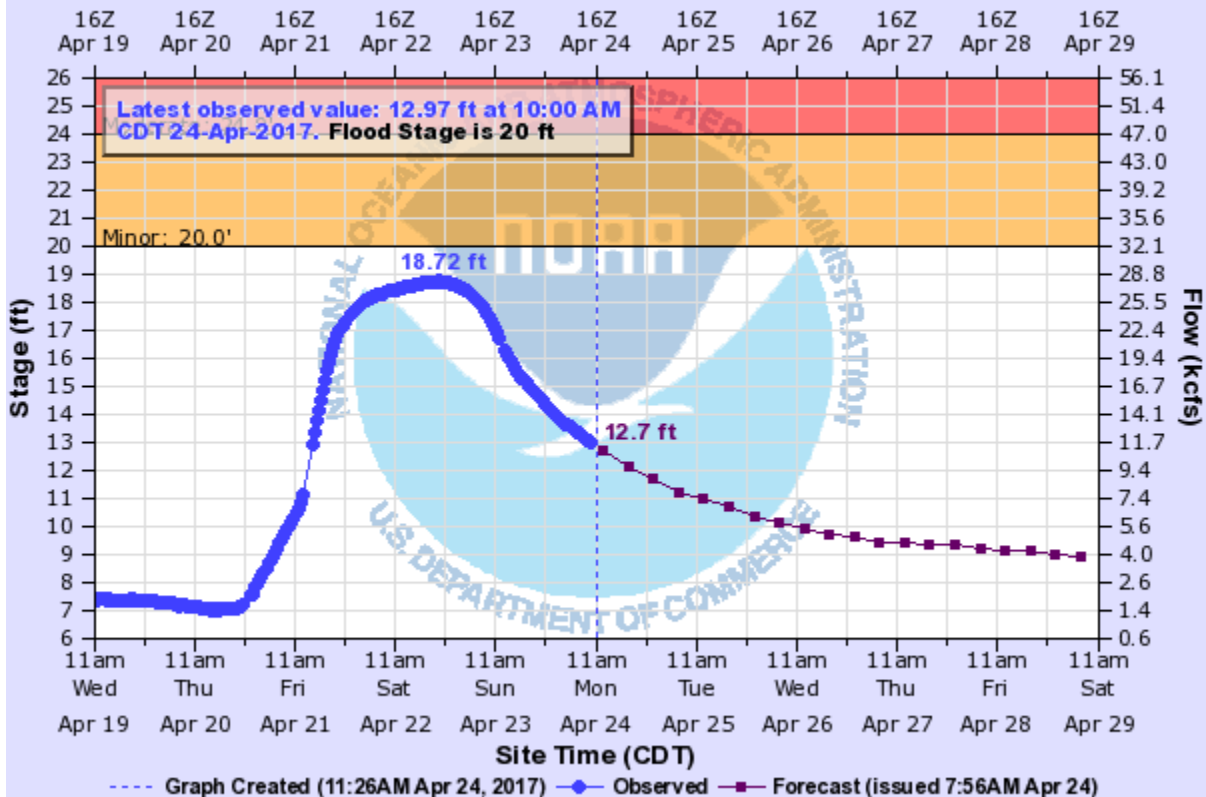
NEOSHO RIVER NEAR COMMERCE

Universal Time (UTC)

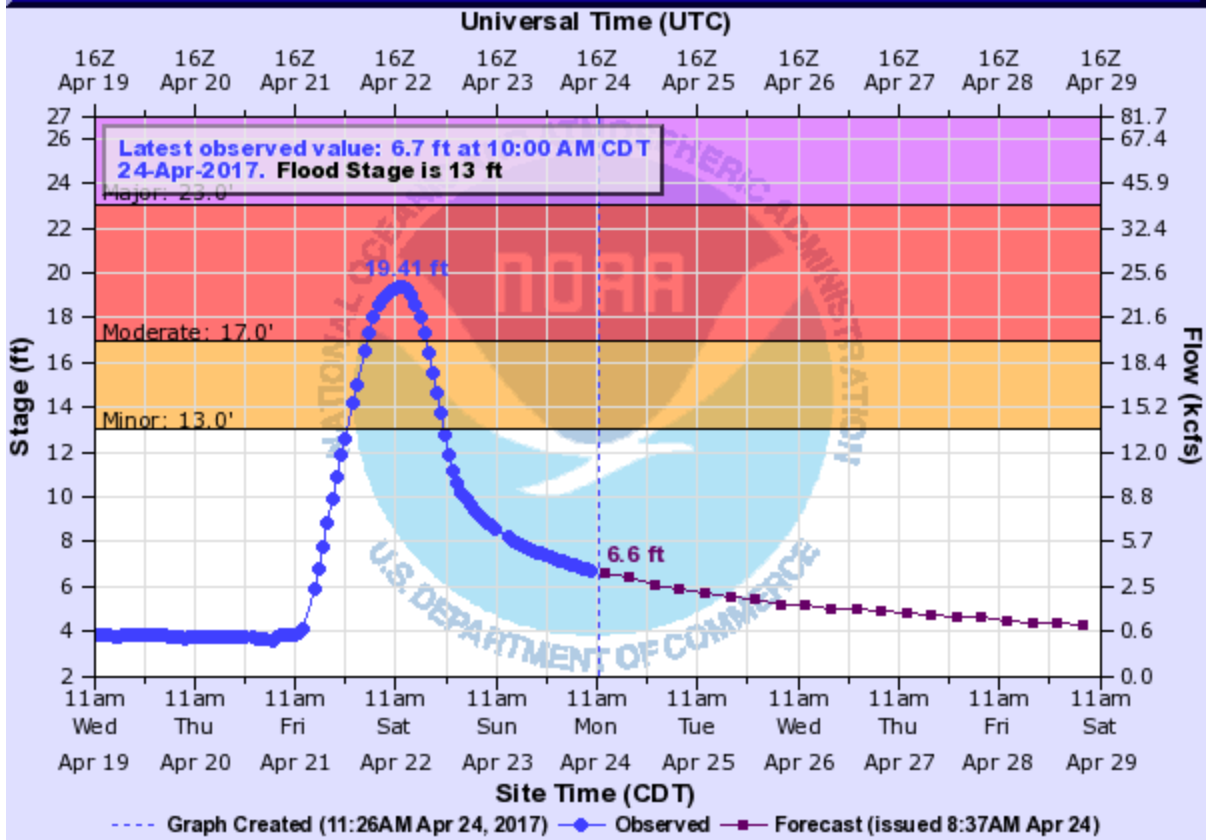


SPRING RIVER NEAR QUAPAW

Universal Time (UTC)



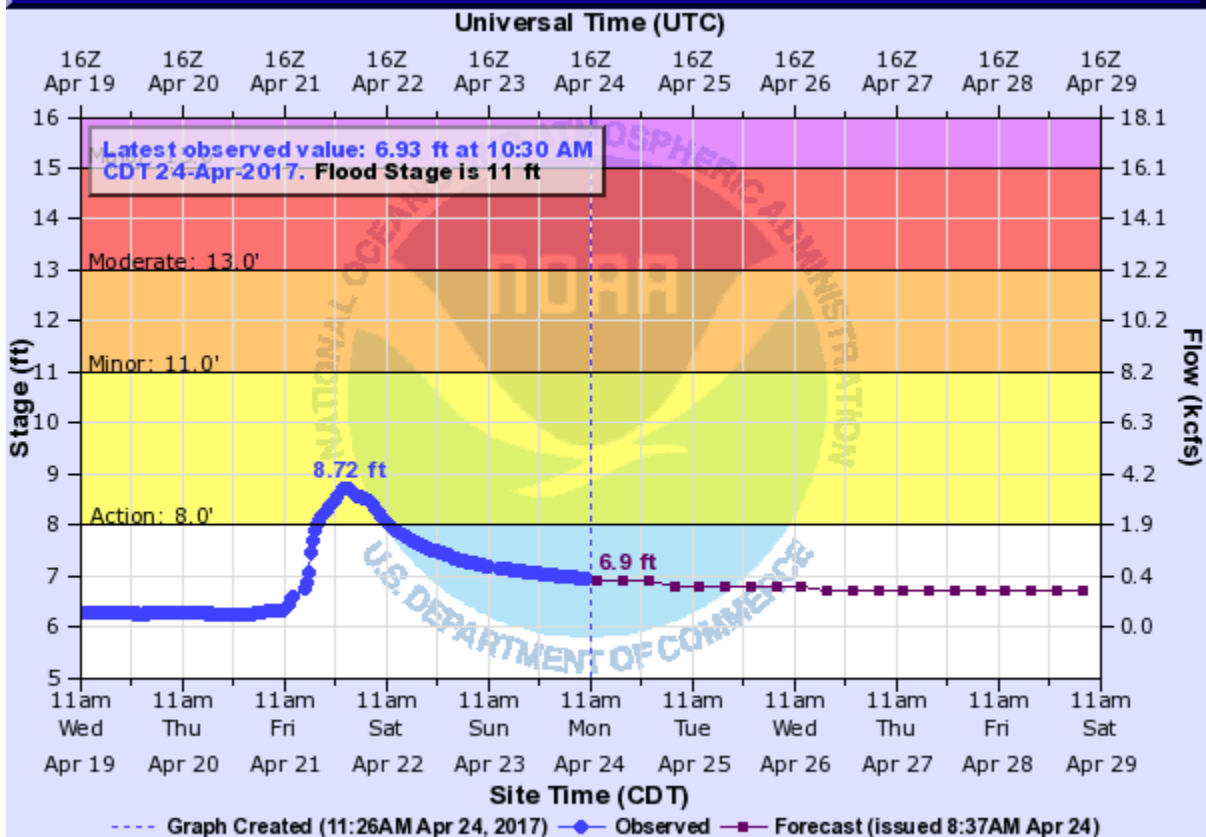
ILLINOIS RIVER (AR OK) NEAR WATTS



WTO2(plotting HGIRG) "Gage 0" Datum: 893.77'

Observations courtesy of US Geological Survey

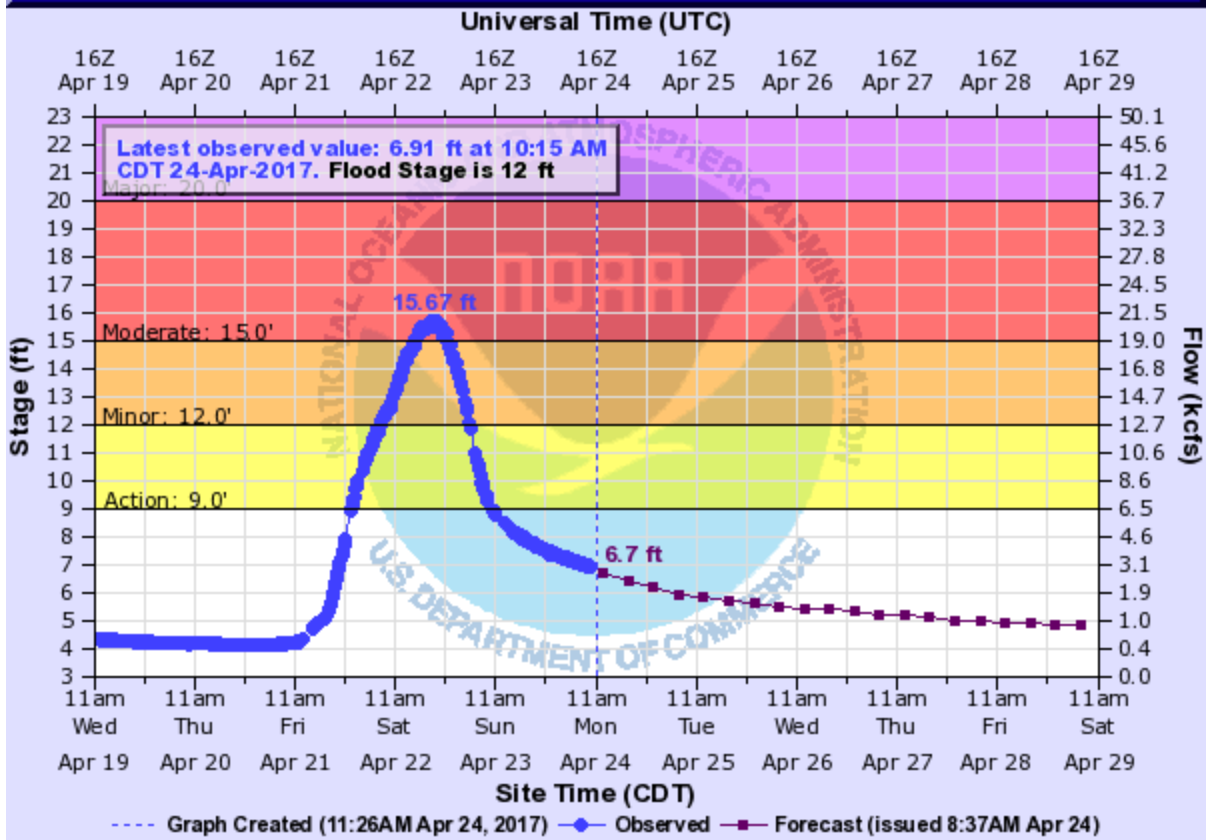
FLINT CREEK (OK) NEAR KANSAS



KNSO2(plotting HGIRG) "Gage 0" Datum: 854.59'

Observations courtesy of US Geological Survey

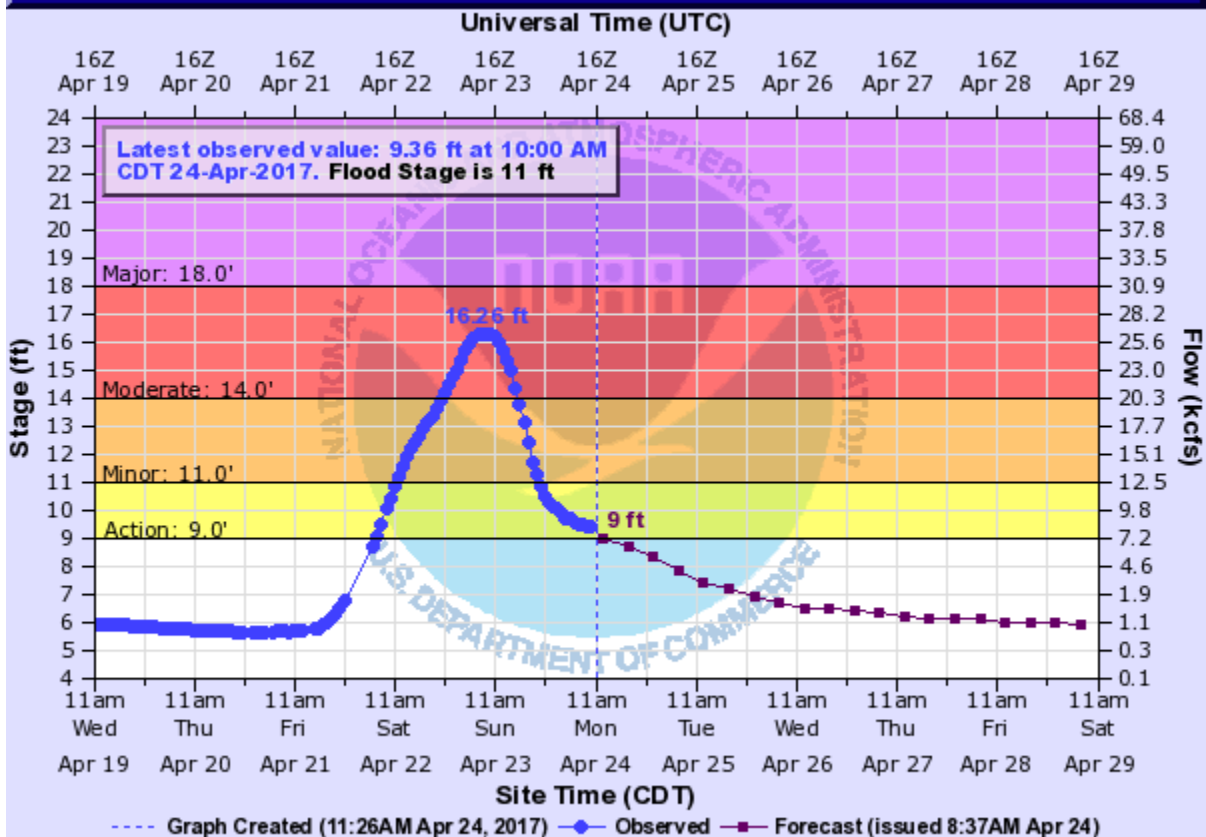
ILLINOIS RIVER (AR OK) AT CHEWEY



CWY02(plotting HGIRG) "Gage 0" Datum: 800.88'

Observations courtesy of US Geological Survey

ILLINOIS RIVER (AR OK) NEAR TAHLEQUAH

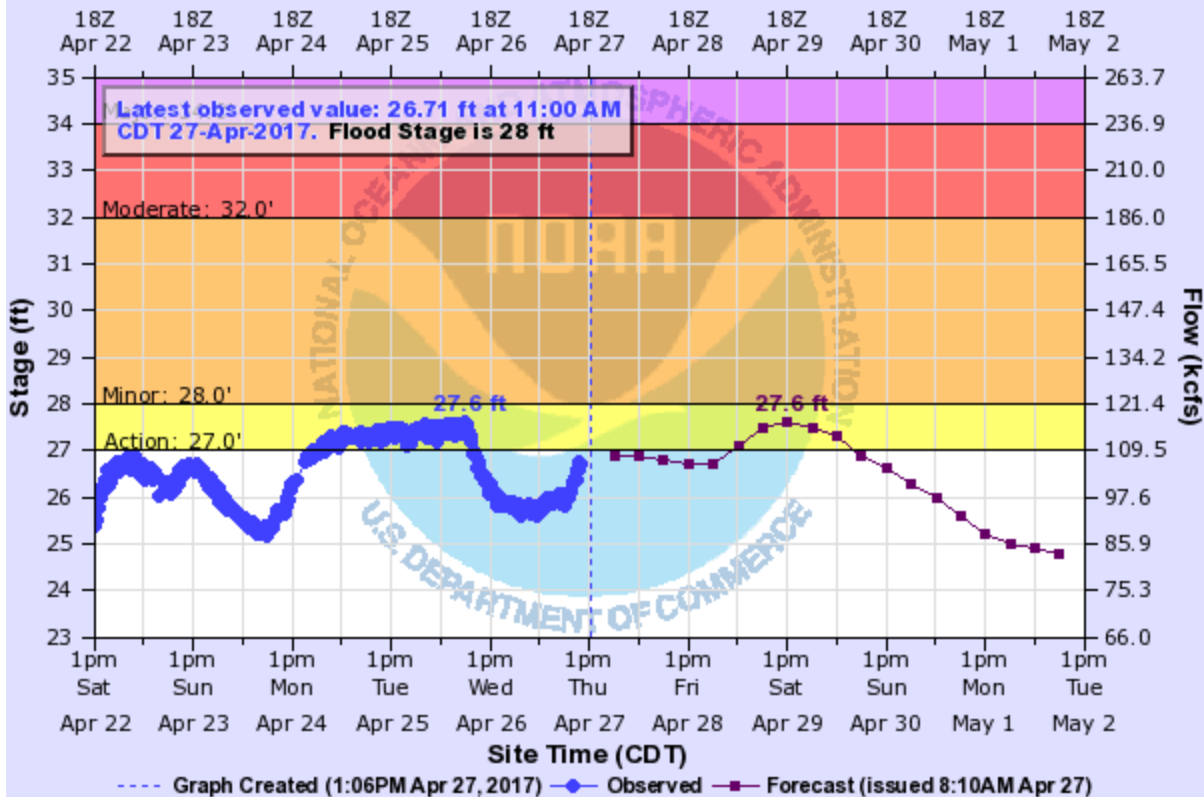


TALO2(plotting HGIRG) "Gage 0" Datum: 664.14'

Observations courtesy of US Geological Survey

ARKANSAS RIVER NEAR MUSKOGEE

Universal Time (UTC)

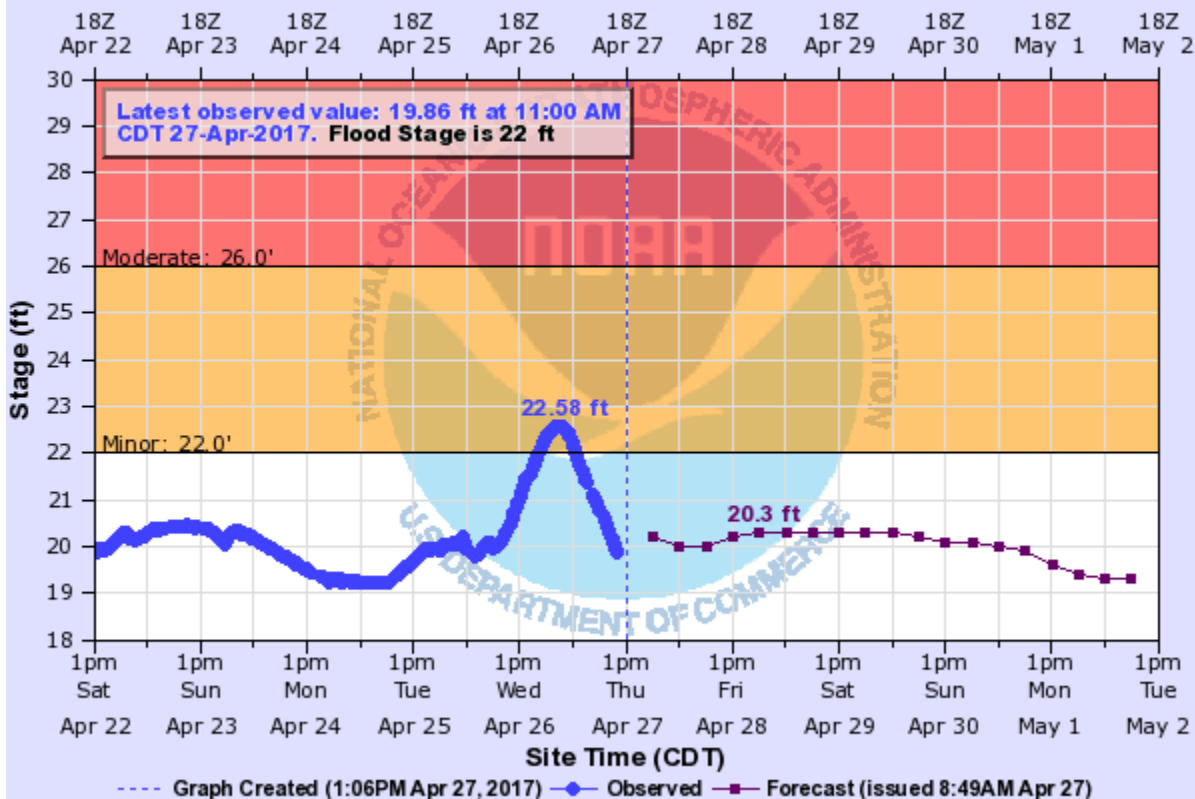


MKGO2(plotting HGIRG) "Gage 0" Datum: 471.38'

Observations courtesy of US Geological Survey

ARKANSAS RIVER AT VAN BUREN

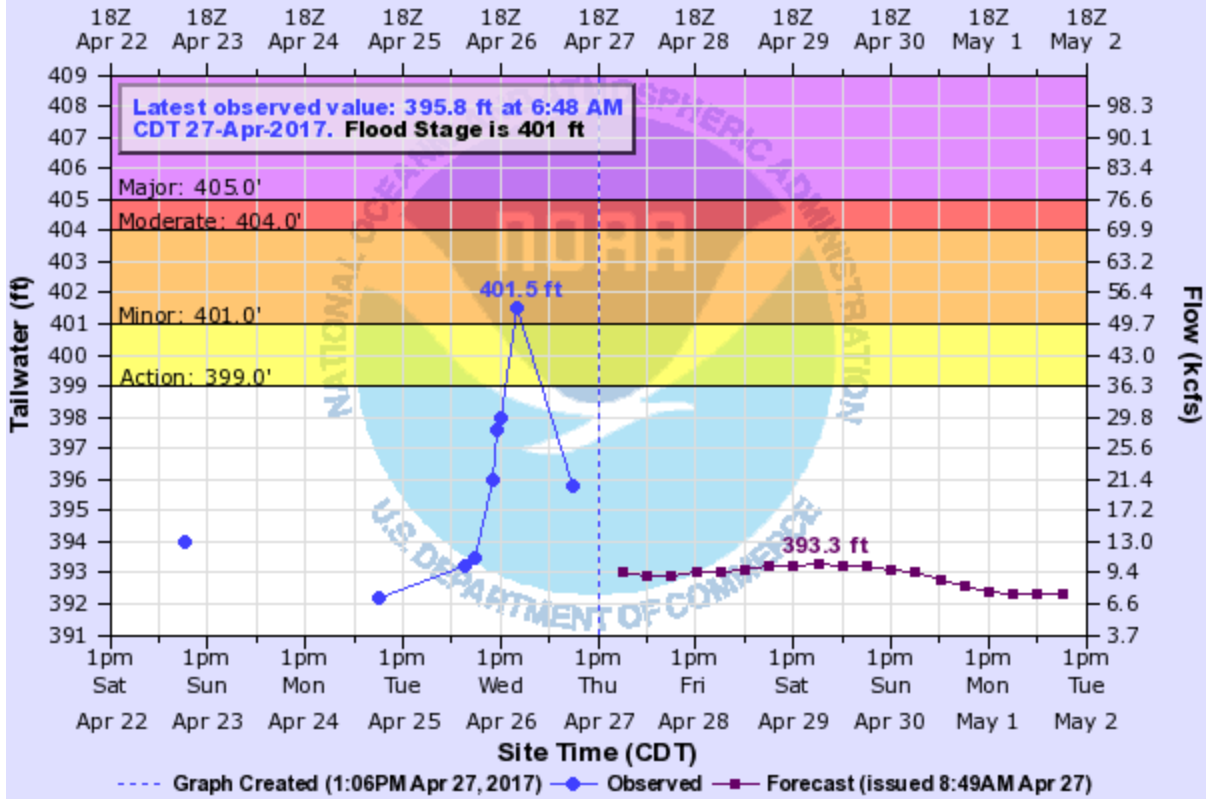
Universal Time (UTC)



VBUA4(plotting HGIRG) "Gage 0" Datum: 372.36'

LEE CREEK NEAR VAN BUREN LCR

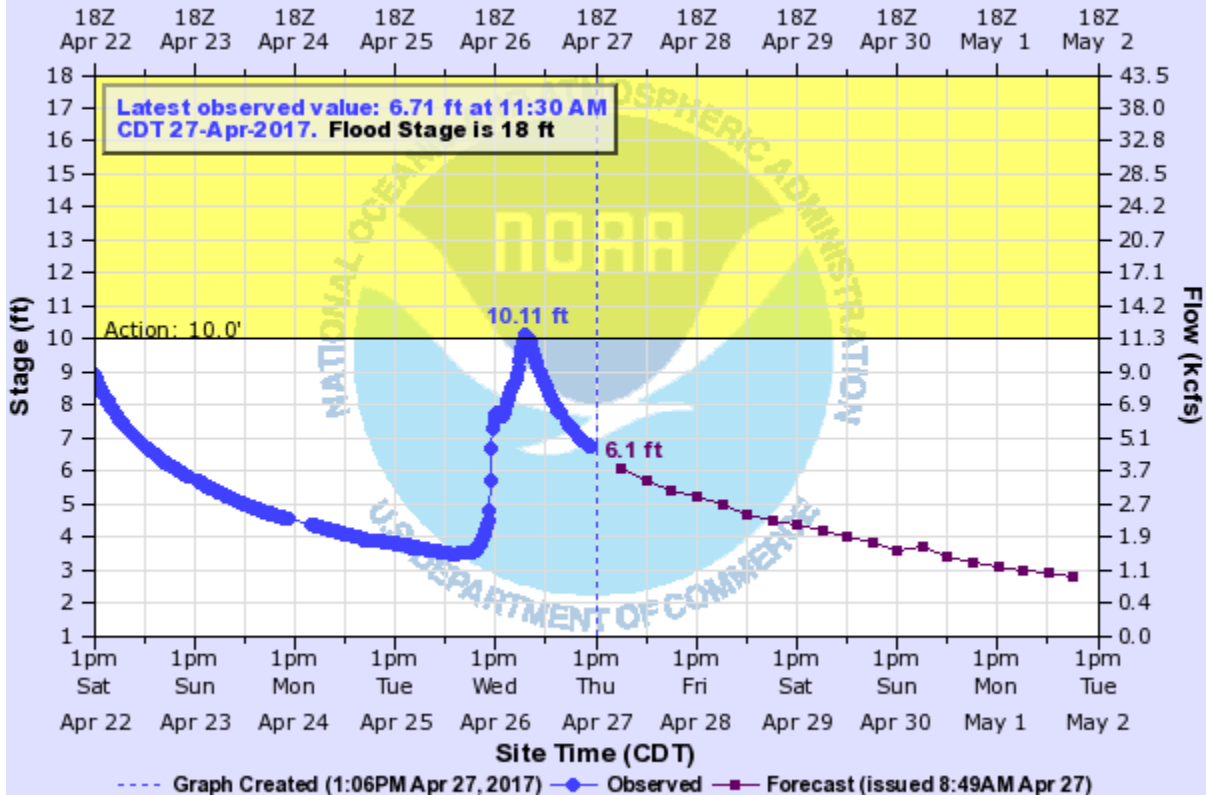
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VBRA4(plotting HTIRZ) "Gage 0" Datum: 0'

MULBERRY RIVER (AR) NEAR MULBERRY

Universal Time (UTC)

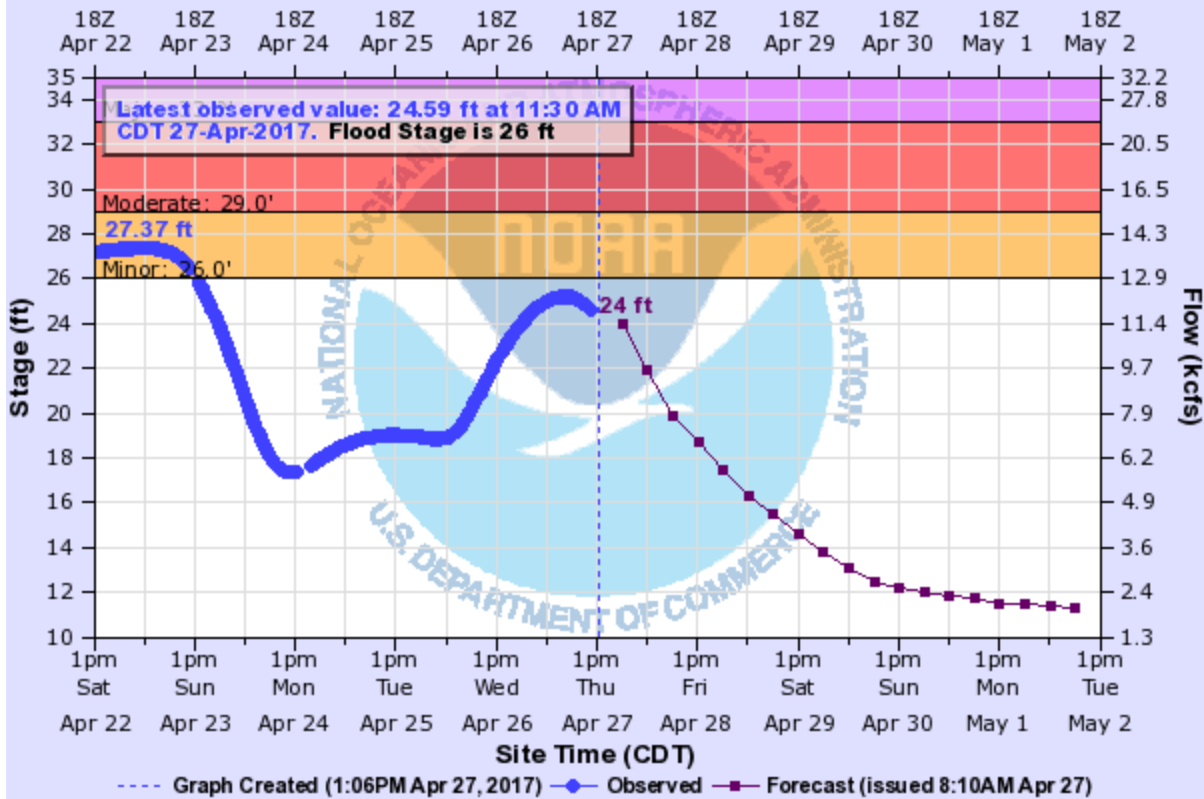


MLBA4(plotting HGIRG) "Gage 0" Datum: 432.75'

Observations courtesy of USGS/USACE/ADEQ

CANEY RIVER NEAR COLLINSVILLE

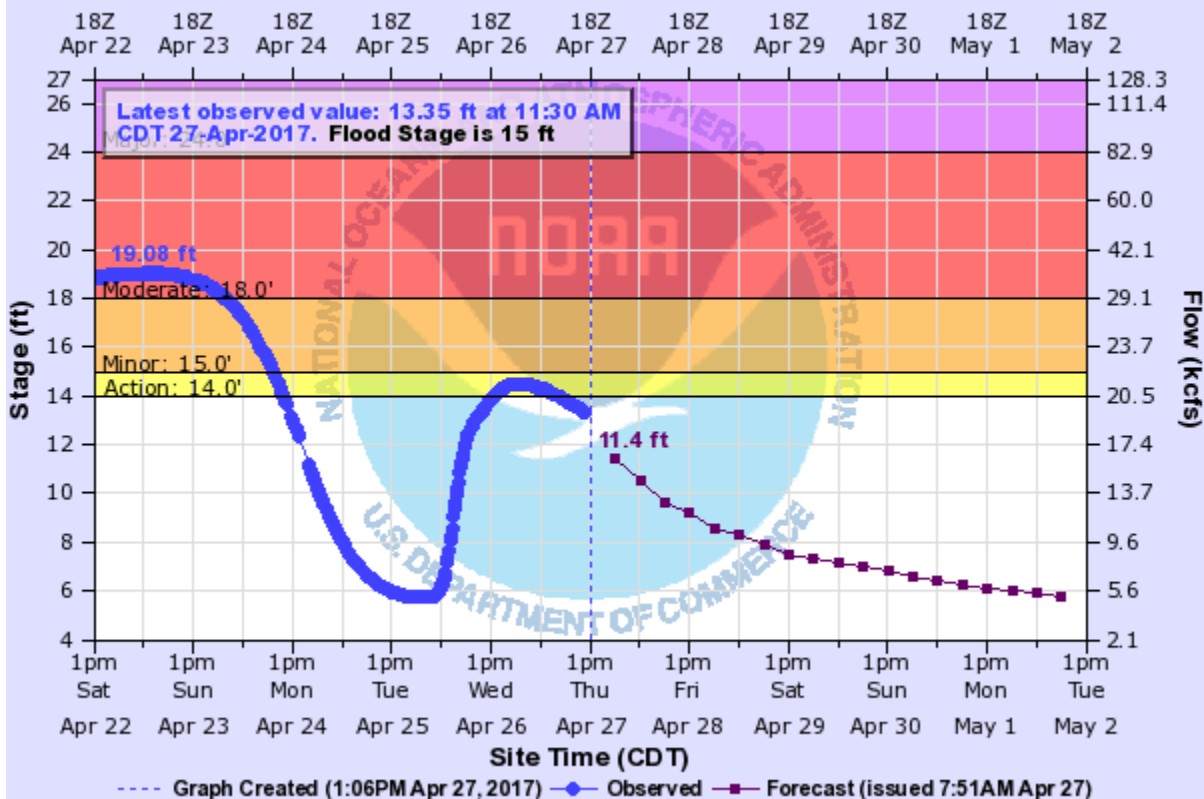
Universal Time (UTC)



CVL02(plotting HGIRG) "Gage 0" Datum: 565.72'

NEOSHO RIVER NEAR COMMERCE

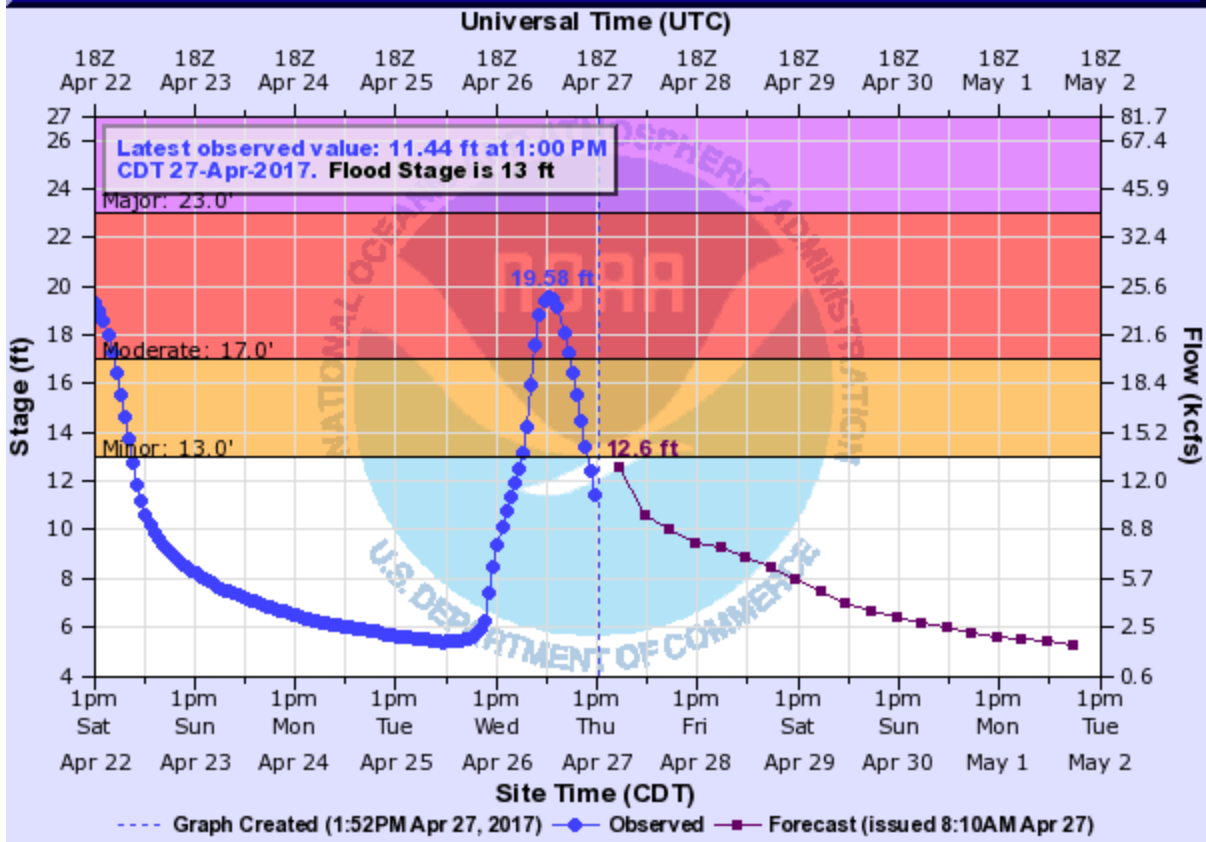
Universal Time (UTC)



COMO2(plotting HGIRG) "Gage 0" Datum: 748.97'

Observations courtesy of US Geological Survey

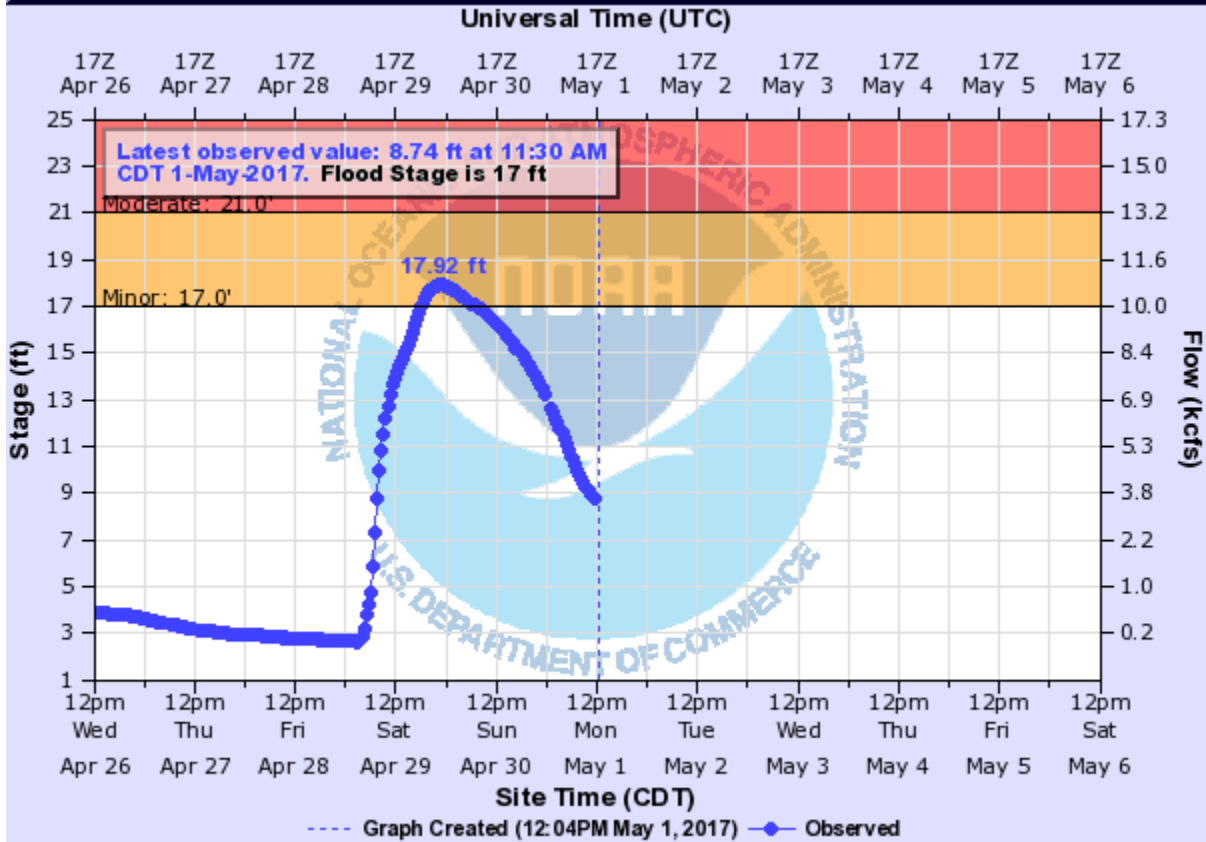
ILLINOIS RIVER (AR OK) NEAR WATTS



WT02(plotting HGIRG) "Gage 0" Datum: 893.77'

Observations courtesy of US Geological Survey

BLACK BEAR CREEK AT PAWNEE

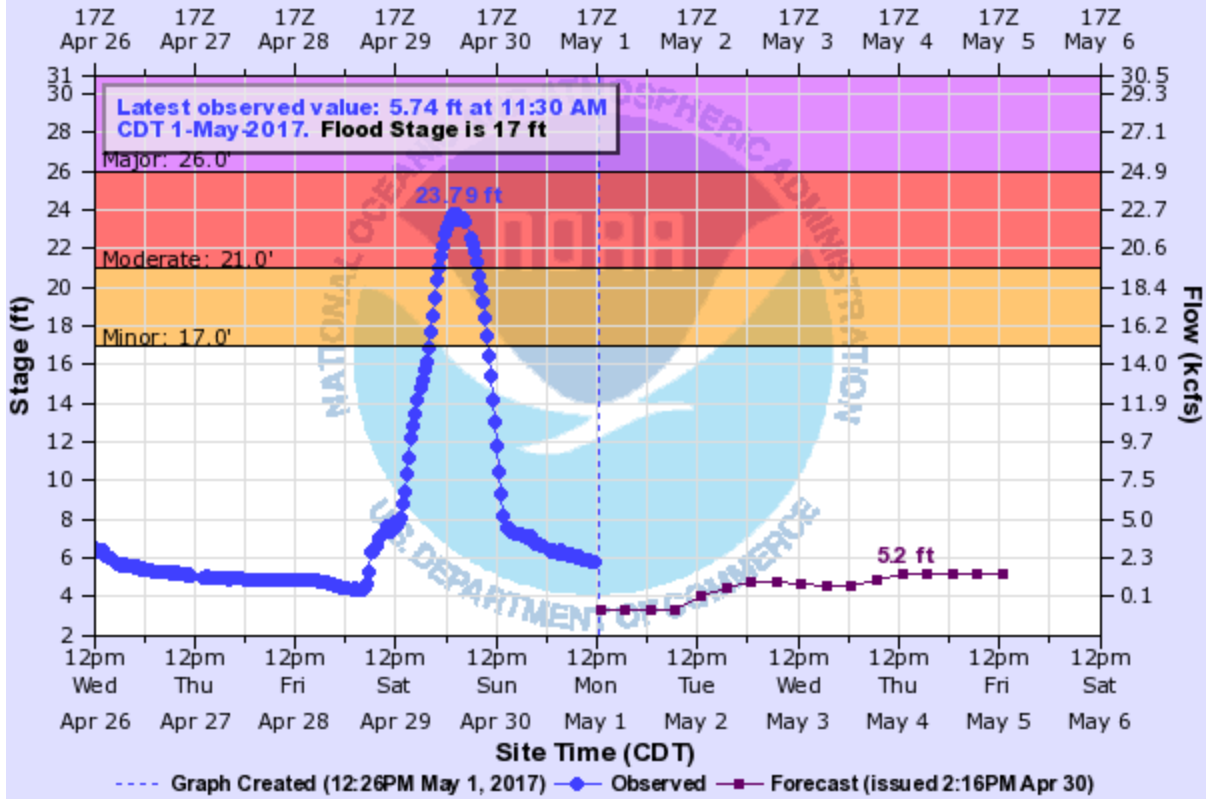


PAW02(plotting HGIRG) "Gage 0" Datum: 802.73'

Observations courtesy of US Geological Survey

BIRD CREEK AT AVANT

Universal Time (UTC)

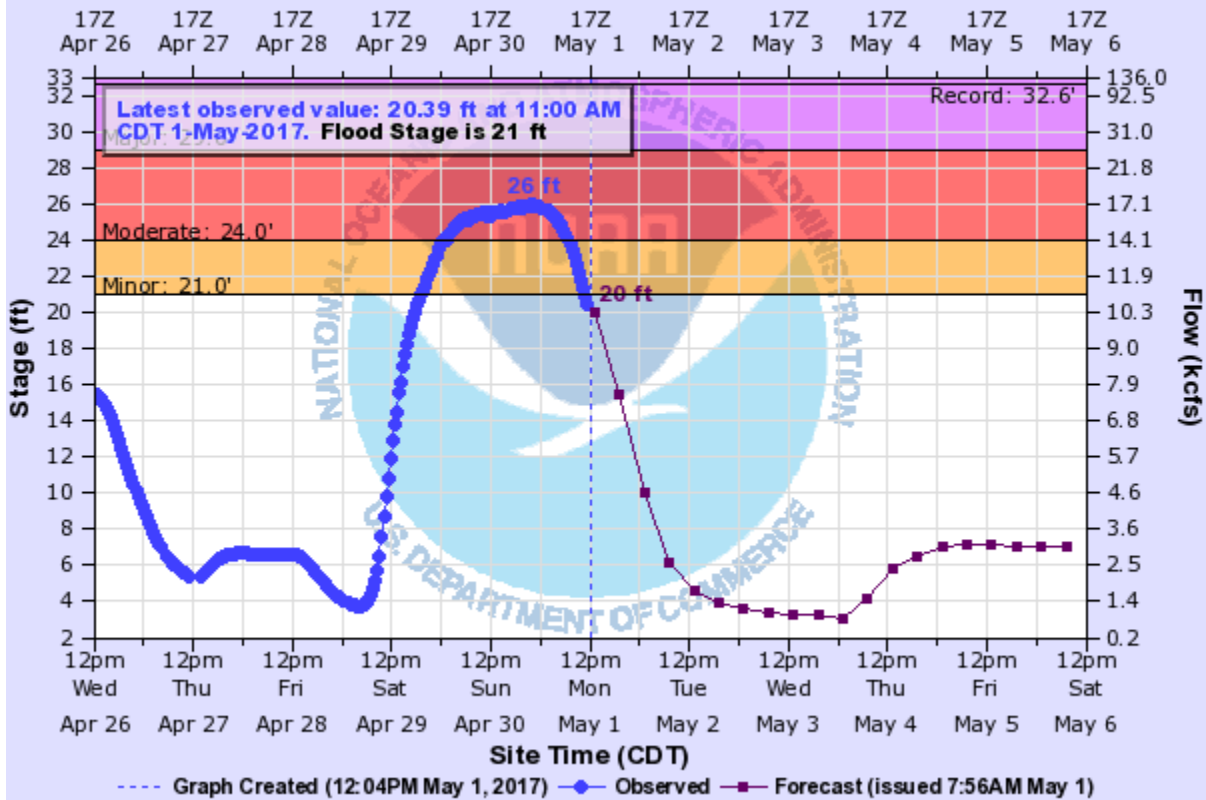


AVT02(plotting HGIRG) "Gage 0" Datum: 646.28'

Observations courtesy of US Geological Survey

BIRD CREEK NEAR SPERRY

Universal Time (UTC)

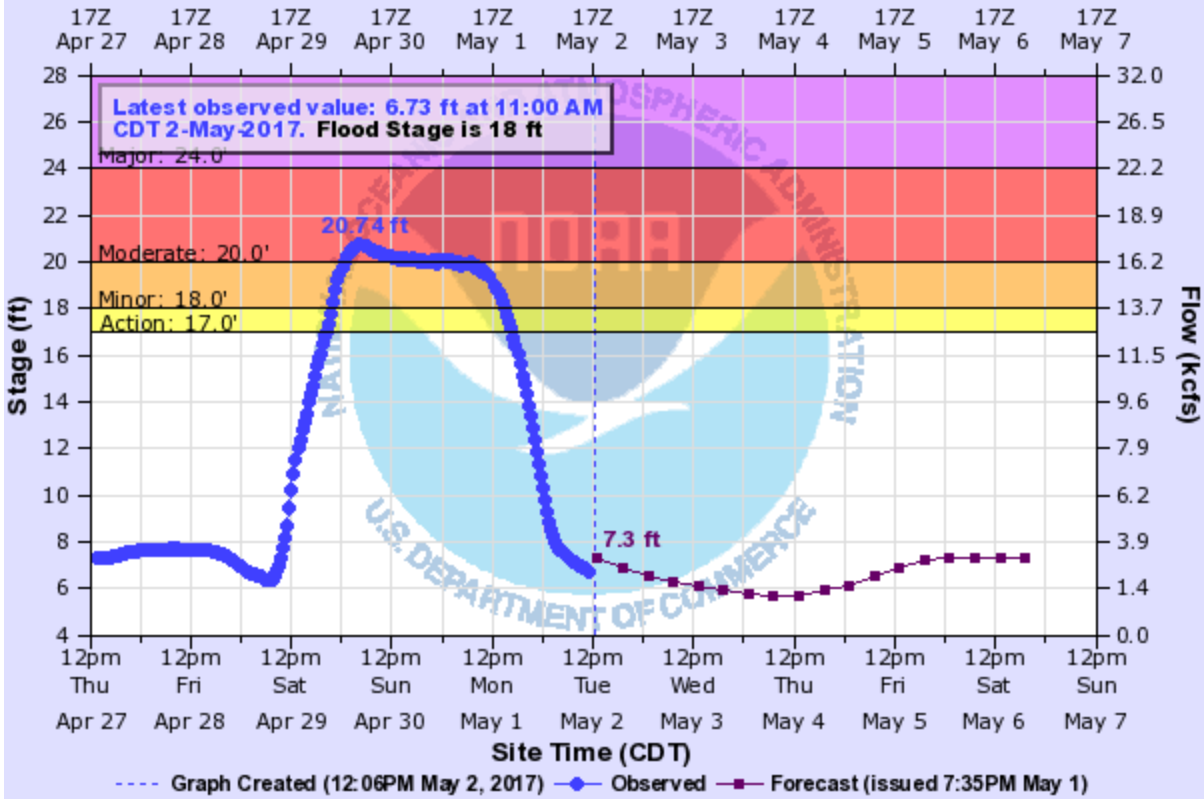


SPE02(plotting HGIRG) "Gage 0" Datum: 579.43'

Observations courtesy of US Geological Survey

BIRD CREEK NEAR OWASSO

Universal Time (UTC)

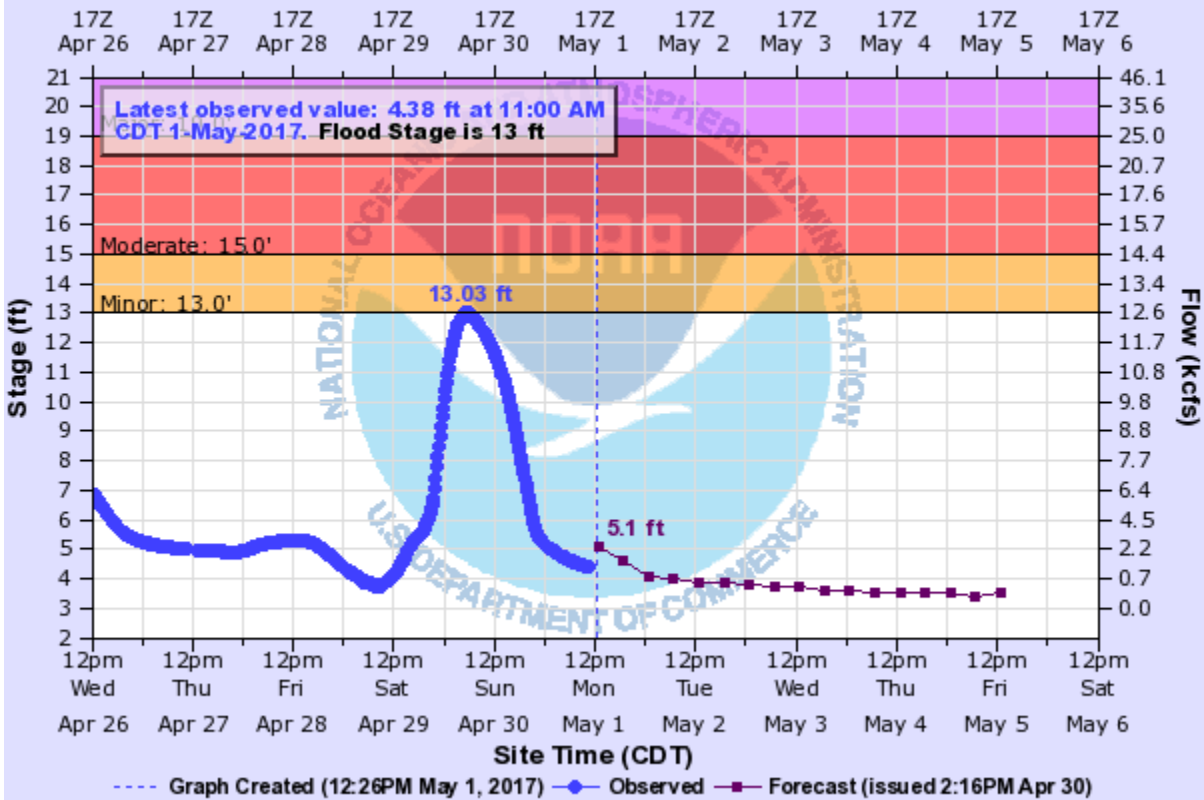


OWSO2(plotting HGIRG) "Gage 0" Datum: 560.17'

Observations courtesy of US Geological Survey

CANEY RIVER AT BARTLESVILLE

Universal Time (UTC)

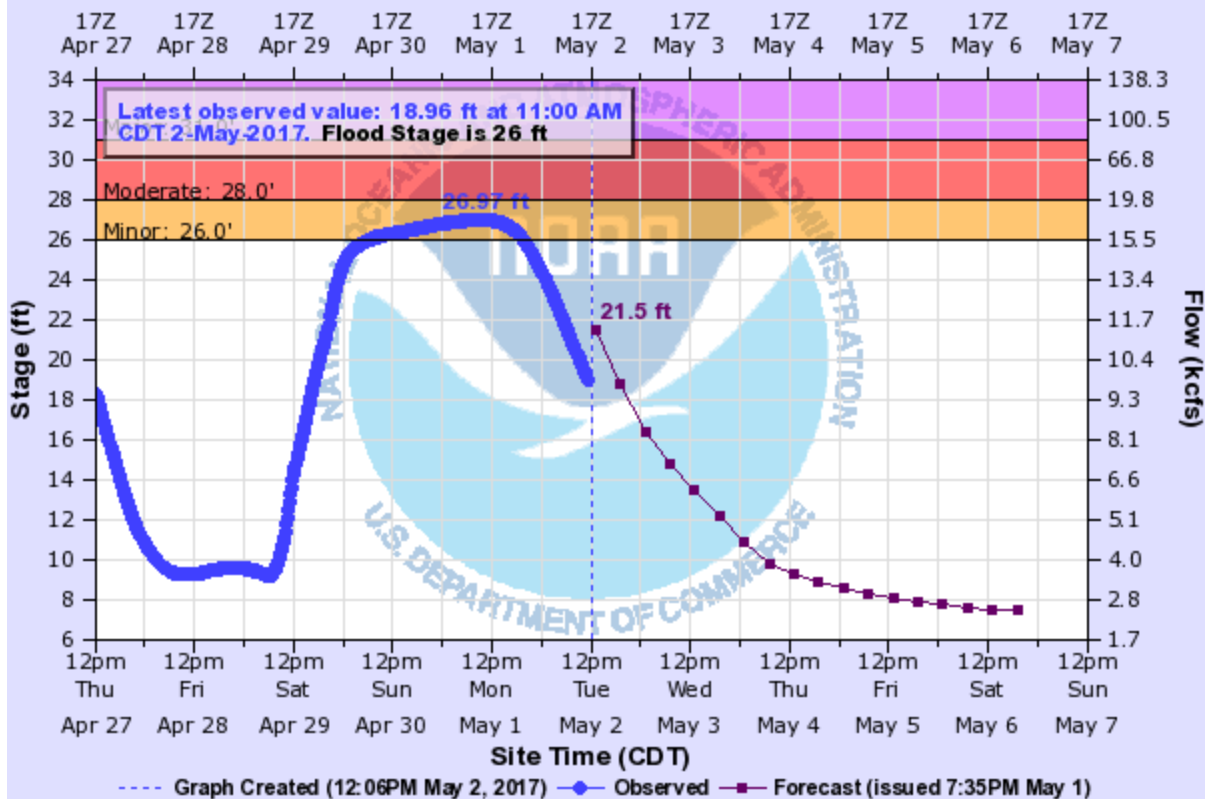


BVLO2(plotting HGIRG) "Gage 0" Datum: 653.33'

Observations courtesy of US Geological Survey

CANEY RIVER NEAR RAMONA

Universal Time (UTC)

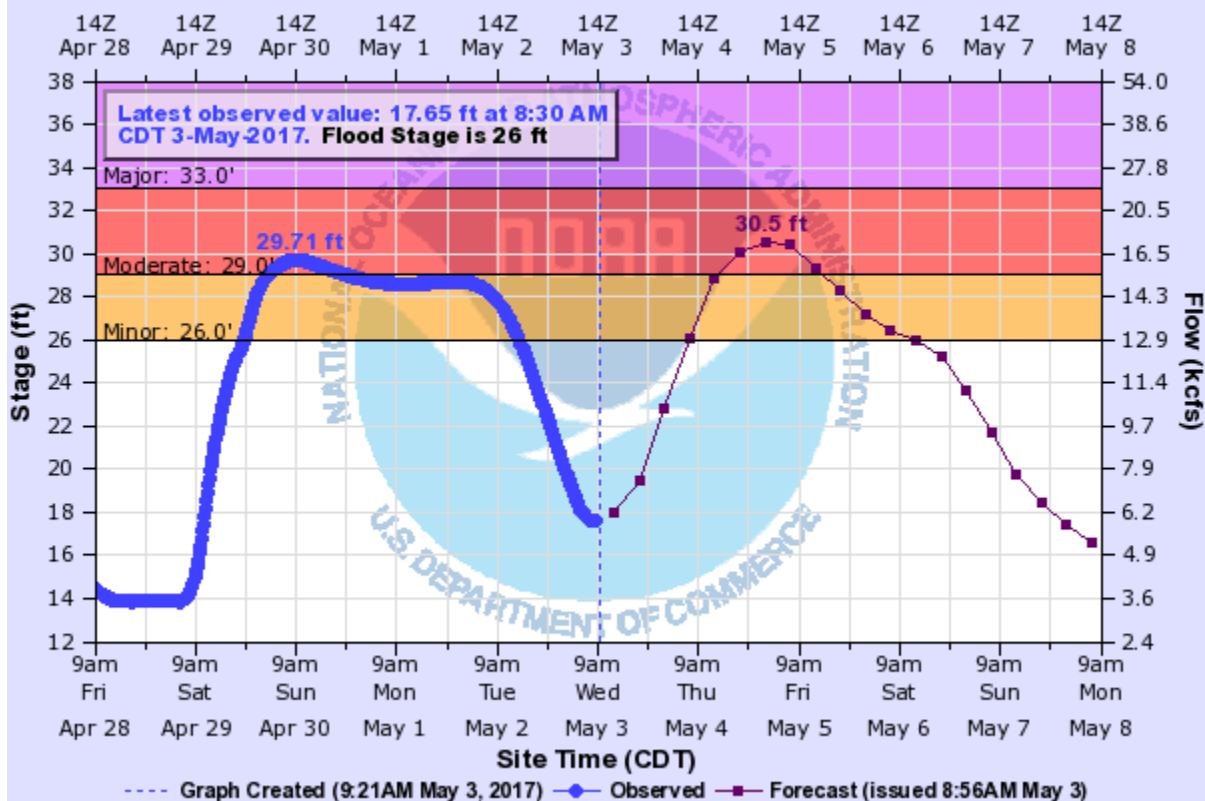


RAMO2(plotting HGIRG) "Gage 0" Datum: 586.43'

Observations courtesy of US Geological Survey

CANEY RIVER NEAR COLLINSVILLE

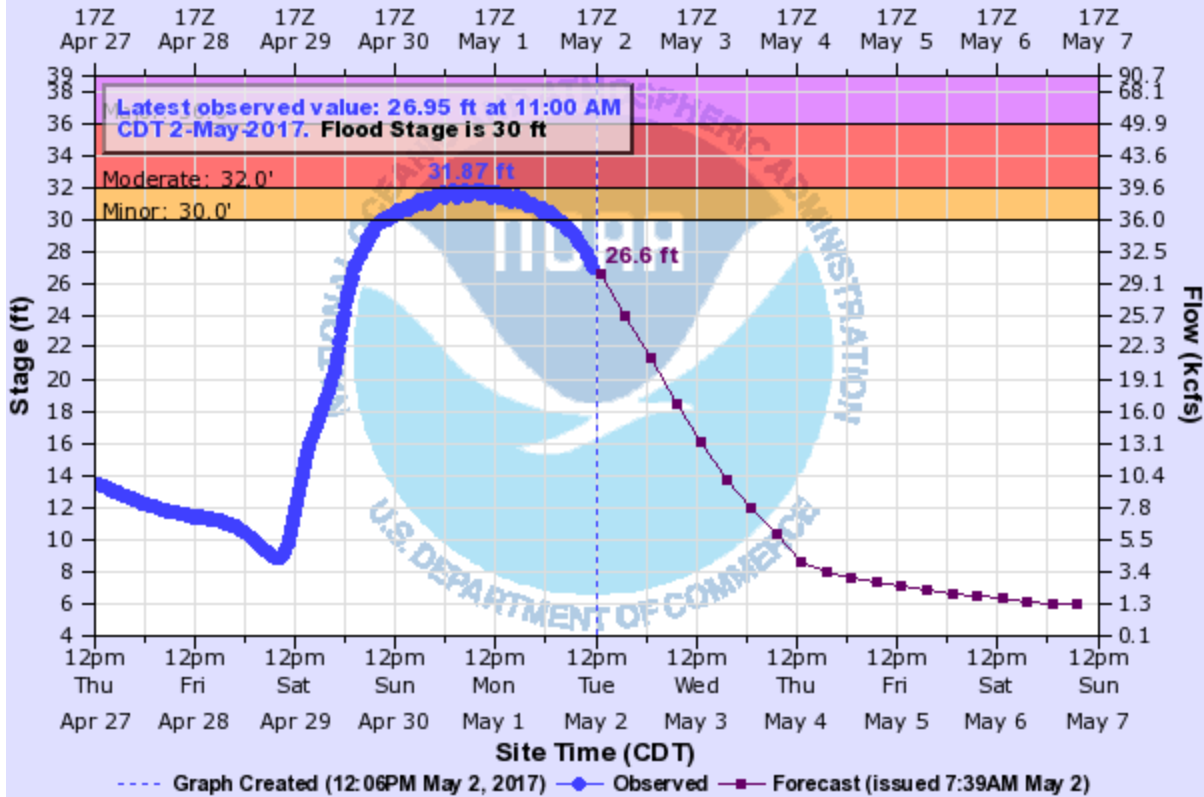
Universal Time (UTC)



CVLO2(plotting HGIRG) "Gage 0" Datum: 565.72'

VERDIGRIS RIVER NEAR LENAPAH

Universal Time (UTC)

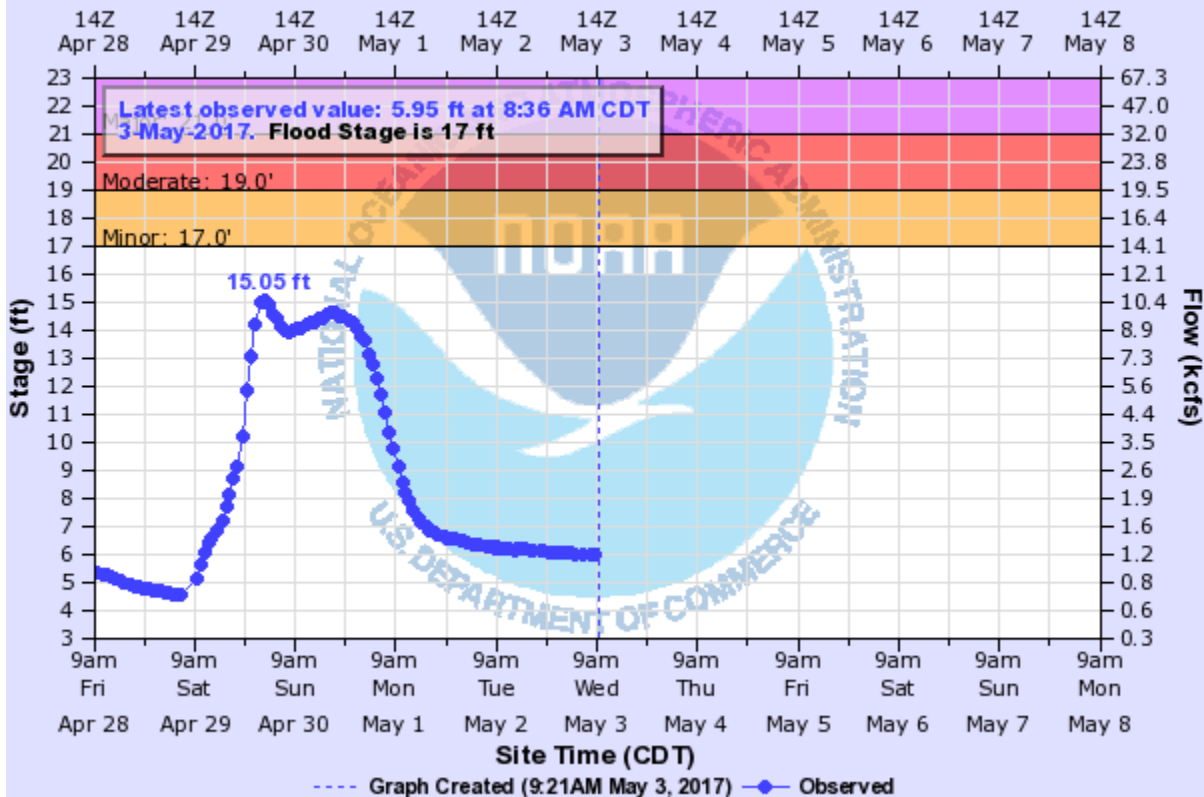


LEPO2(plotting HGIRG) "Gage 0" Datum: 644.9'

Observations courtesy of US Geological Survey

POLECAT CREEK NEAR JENKS

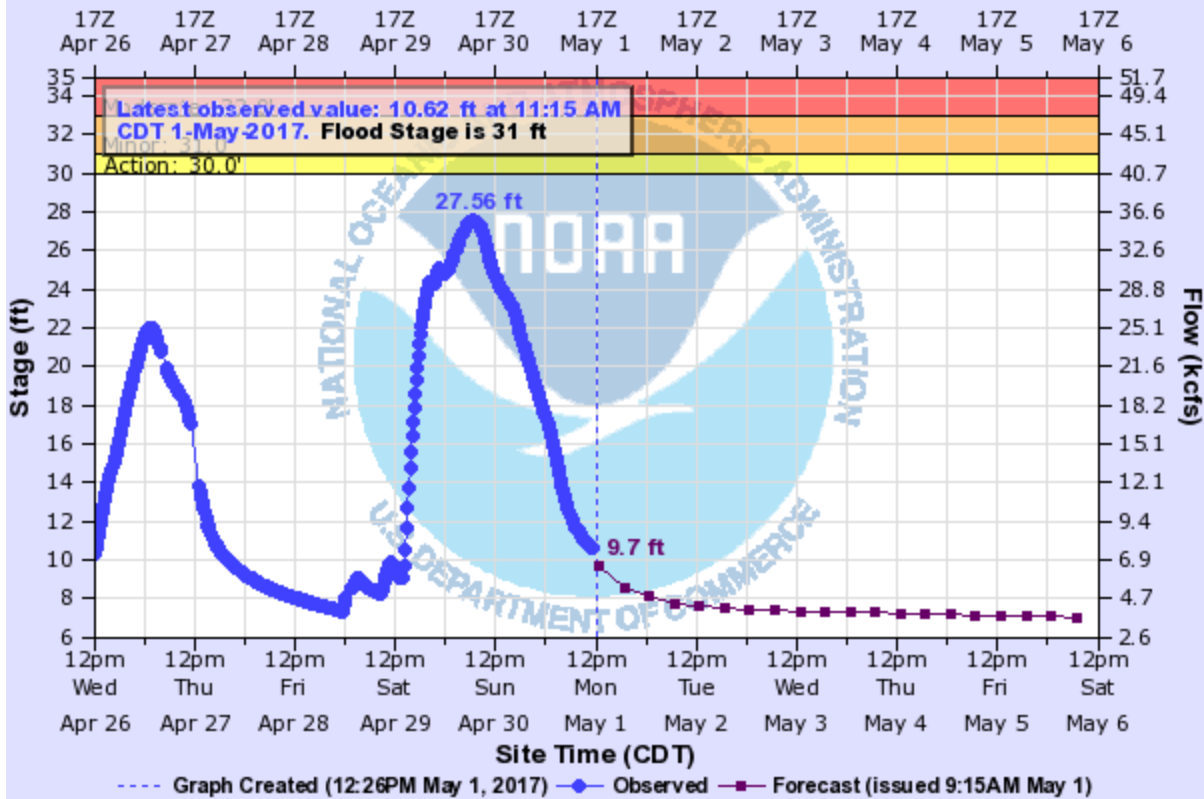
Universal Time (UTC)



JNKO2(plotting HGIRR) "Gage 0" Datum: 599'

KINGS RIVER NEAR BERRYVILLE

Universal Time (UTC)

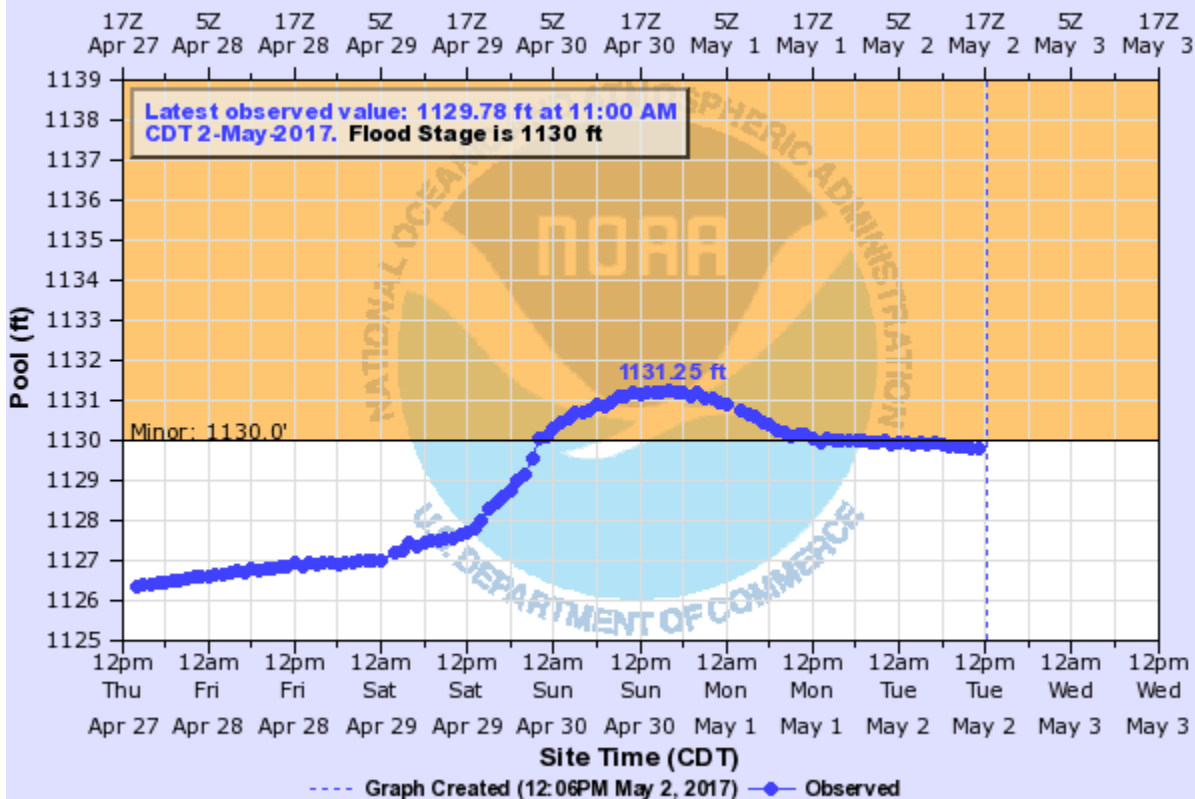


BRYA4(plotting HGIRG) "Gage 0" Datum: 963.1'

Observations courtesy of US Geological Survey

NORTHWEST ARKANSAS LAKES AT BEAVER LAKE

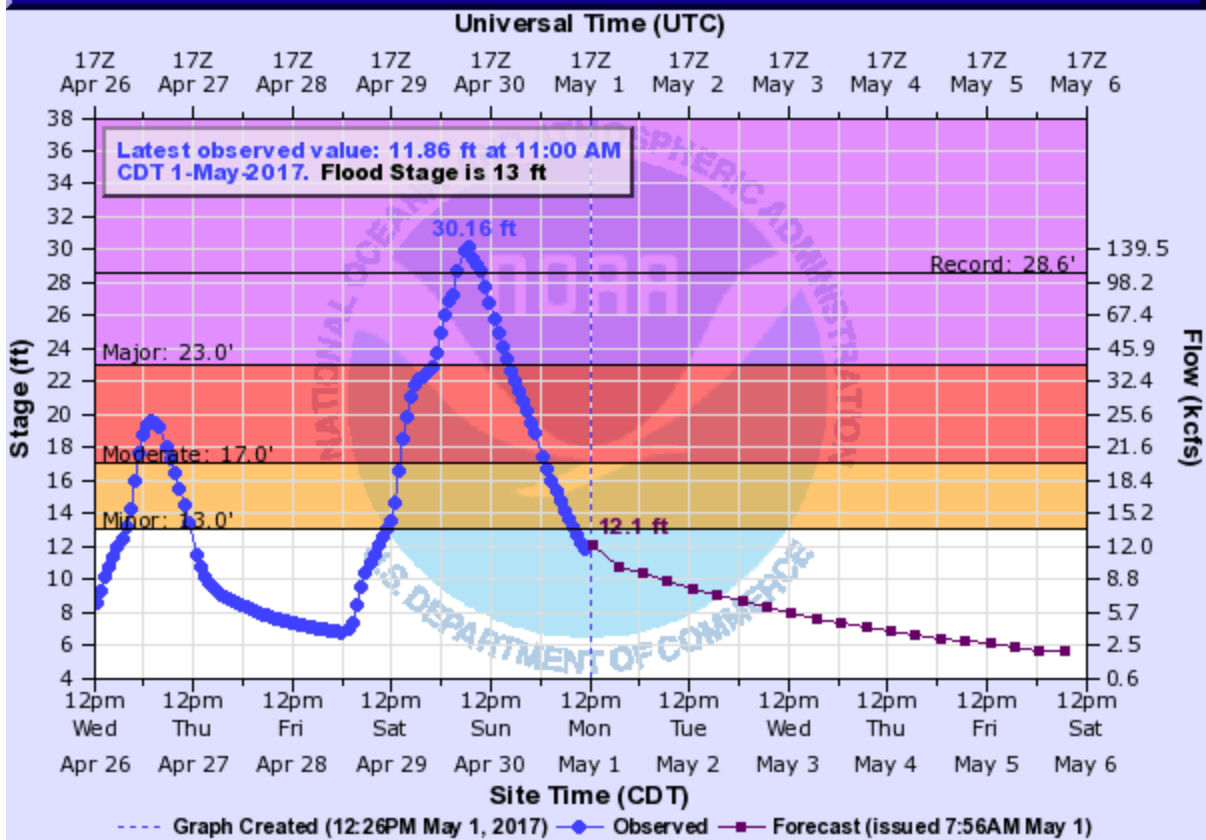
Universal Time (UTC)



BVGA4(plotting HPIRG) "Gage 0" Datum: r/a

Observations courtesy of US Army Corps of Engineers

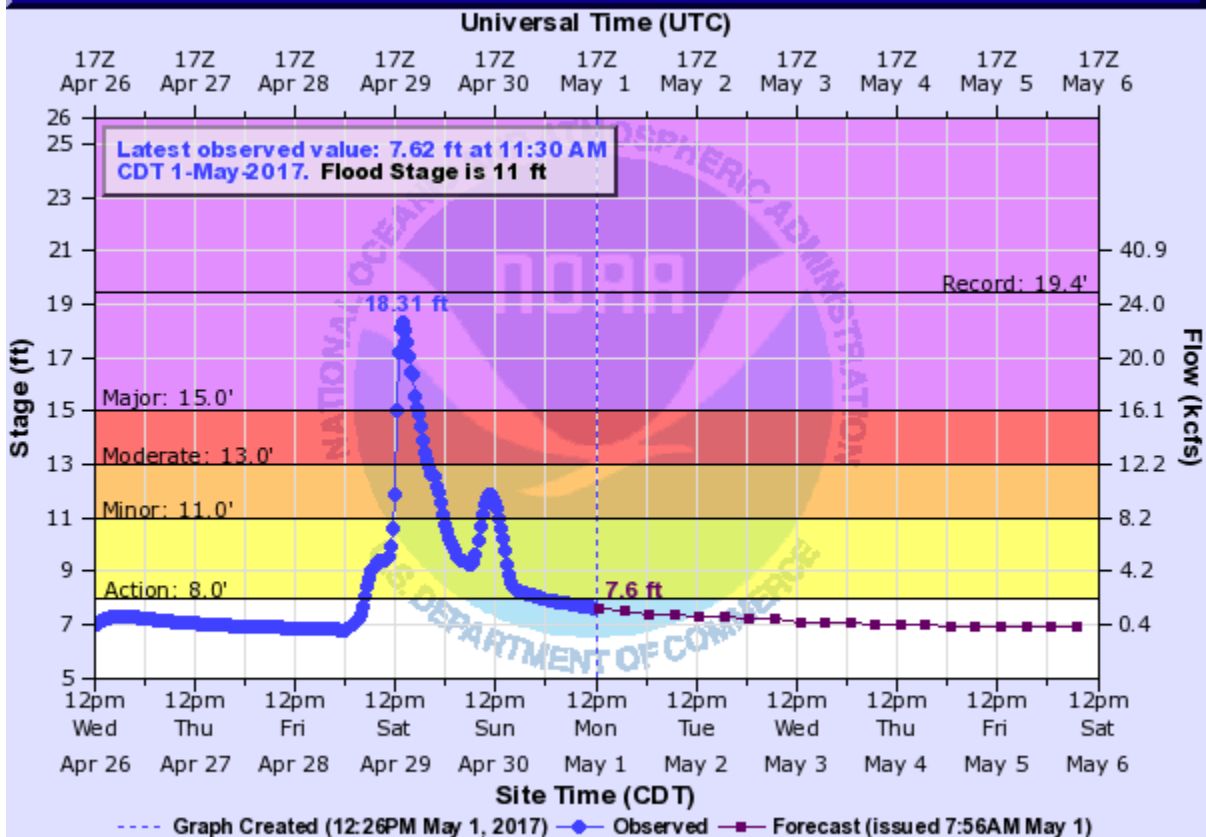
ILLINOIS RIVER (AR OK) NEAR WATTS



WTT02(plotting HGIRG) "Gage 0" Datum: 893.77'

Observations courtesy of US Geological Survey

FLINT CREEK (OK) NEAR KANSAS

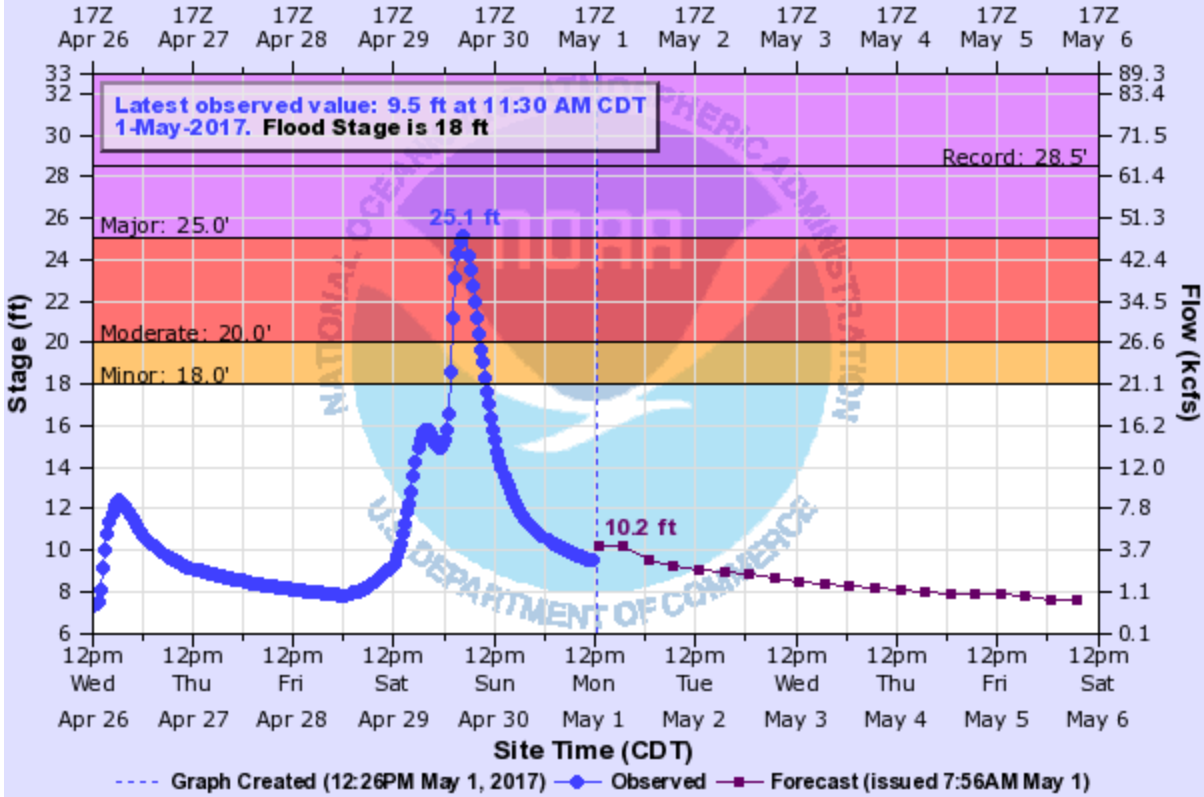


KNS02(plotting HGIRG) "Gage 0" Datum: 854.59'

Observations courtesy of US Geological Survey

BARON FORK AT ELDON

Universal Time (UTC)

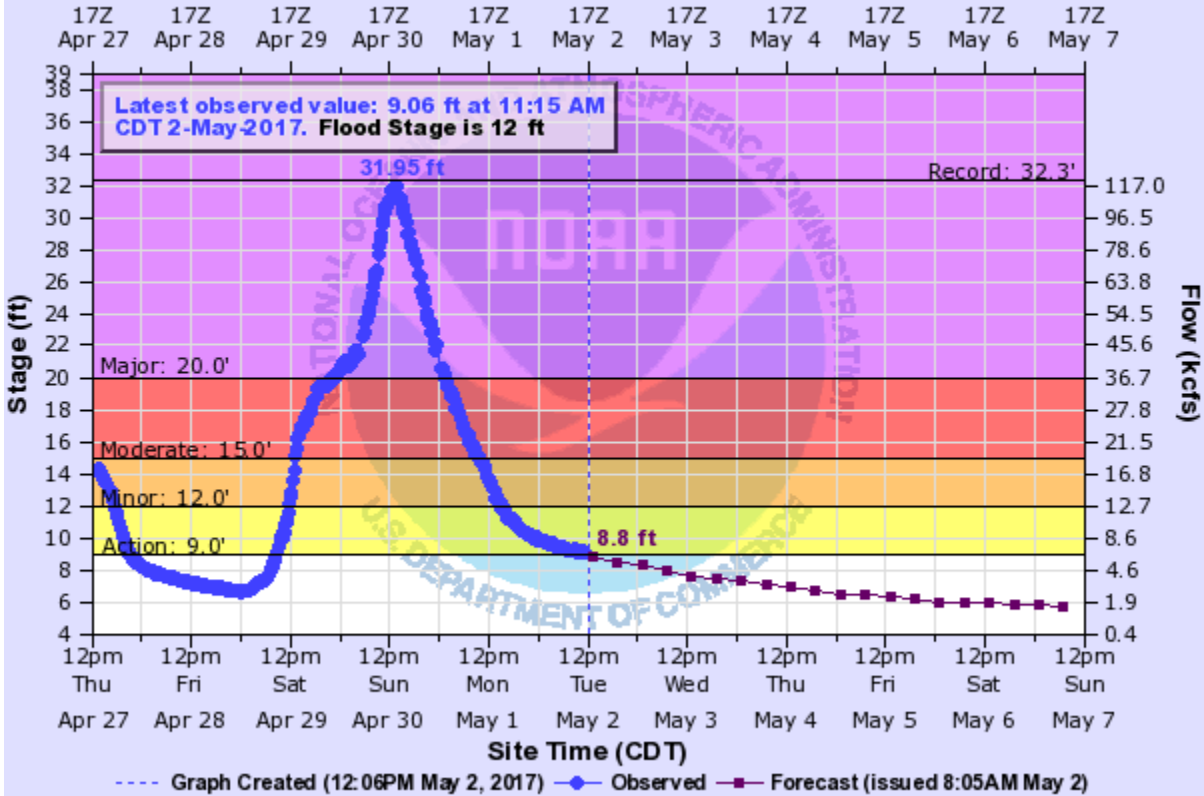


ELDO2(plotting HGIRG) "Gage 0" Datum: 701.14'

Observations courtesy of US Geological Survey

ILLINOIS RIVER (AR OK) AT CHEWEY

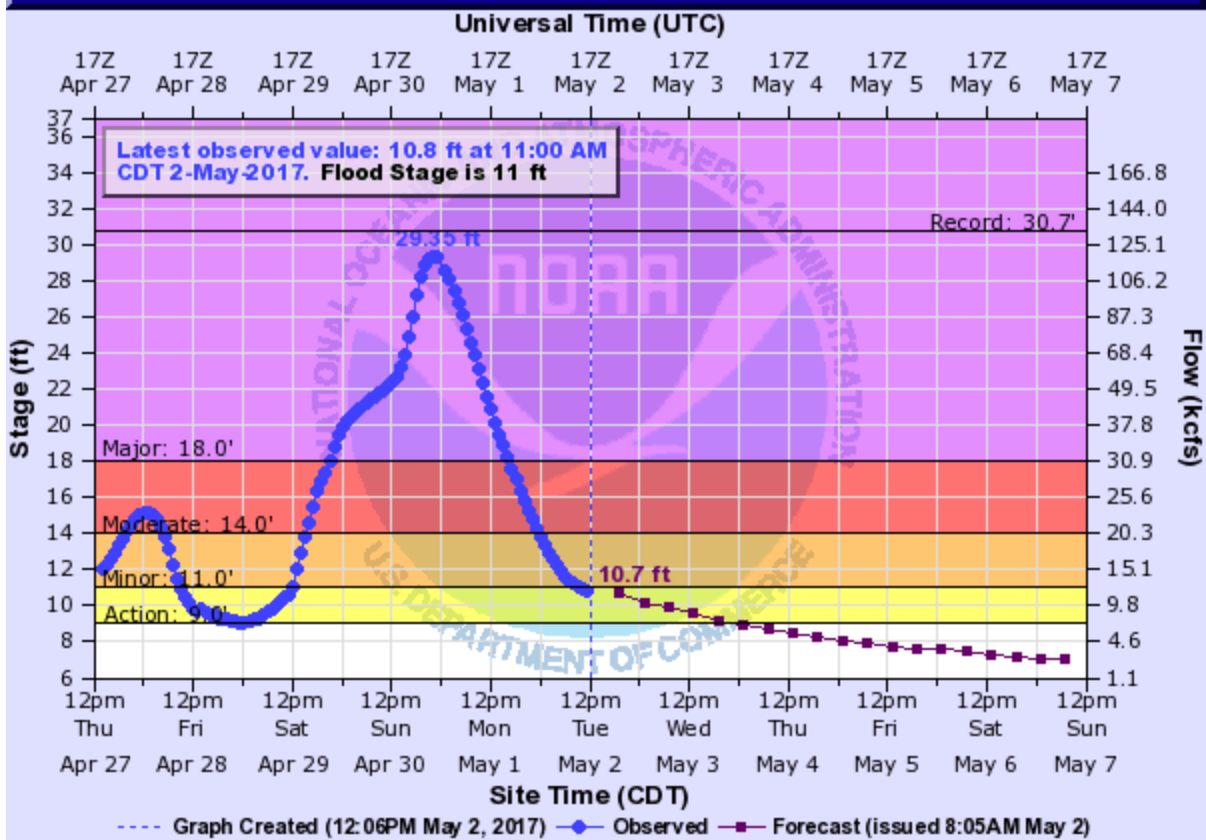
Universal Time (UTC)



CWYO2(plotting HGIRG) "Gage 0" Datum: 800.88'

Observations courtesy of US Geological Survey

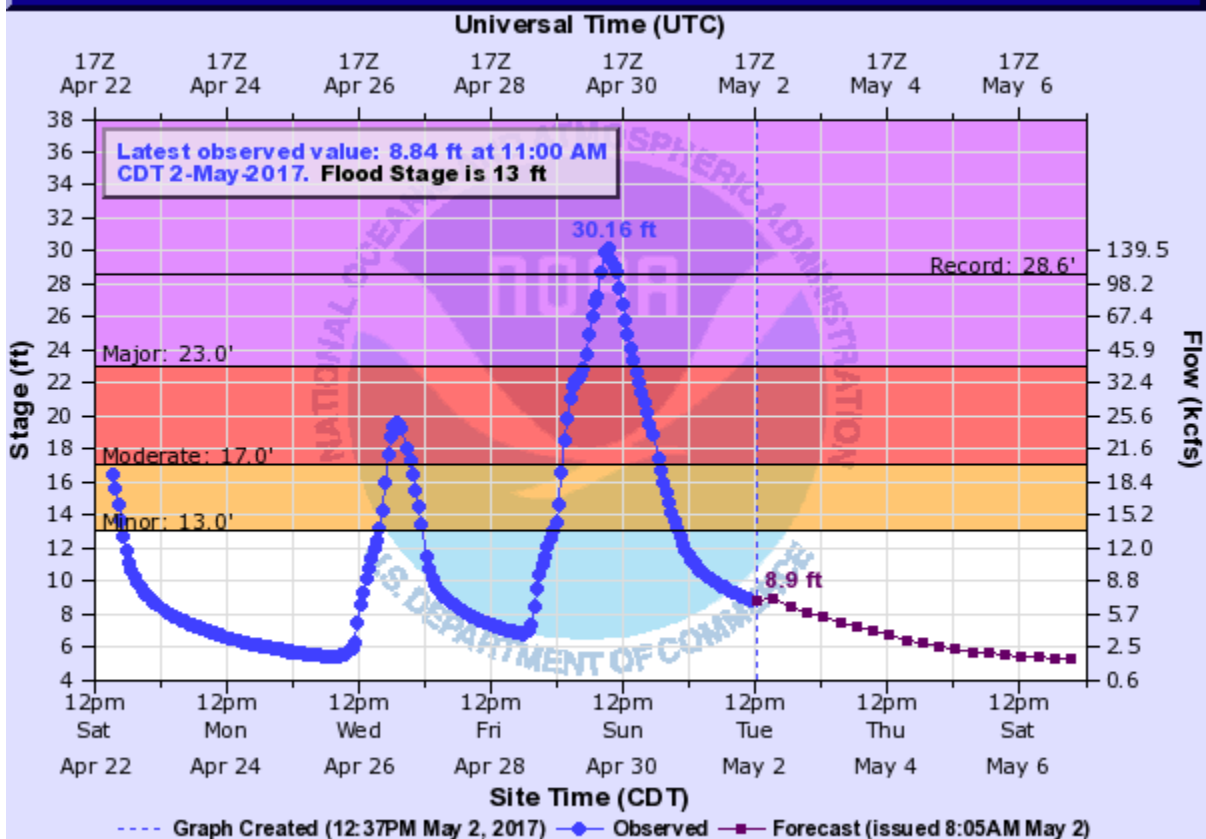
ILLINOIS RIVER (AR OK) NEAR TAHLEQUAH



TALO2(plotting HGIRG) "Gage 0" Datum: 664.14'

Observations courtesy of US Geological Survey

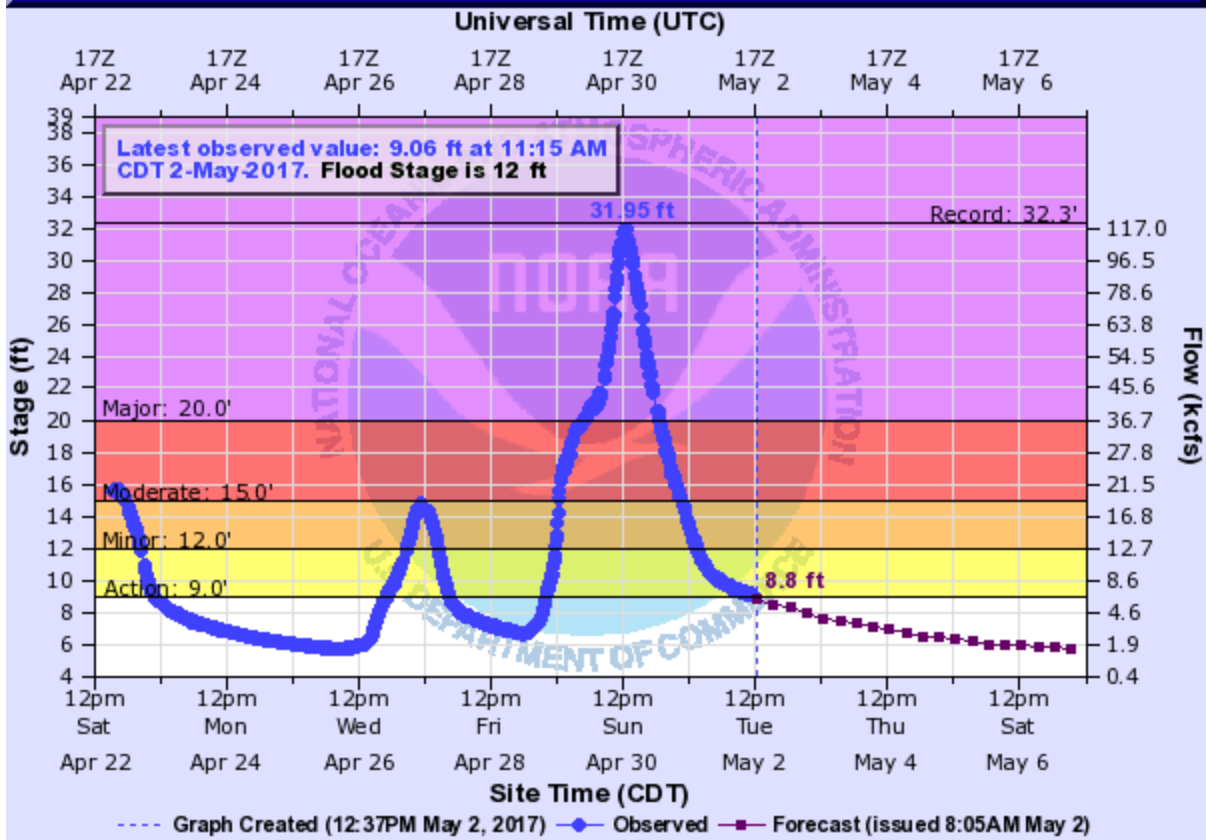
ILLINOIS RIVER (AR OK) NEAR WATTS



WTTO2(plotting HGIRG) "Gage 0" Datum: 893.77'

Observations courtesy of US Geological Survey

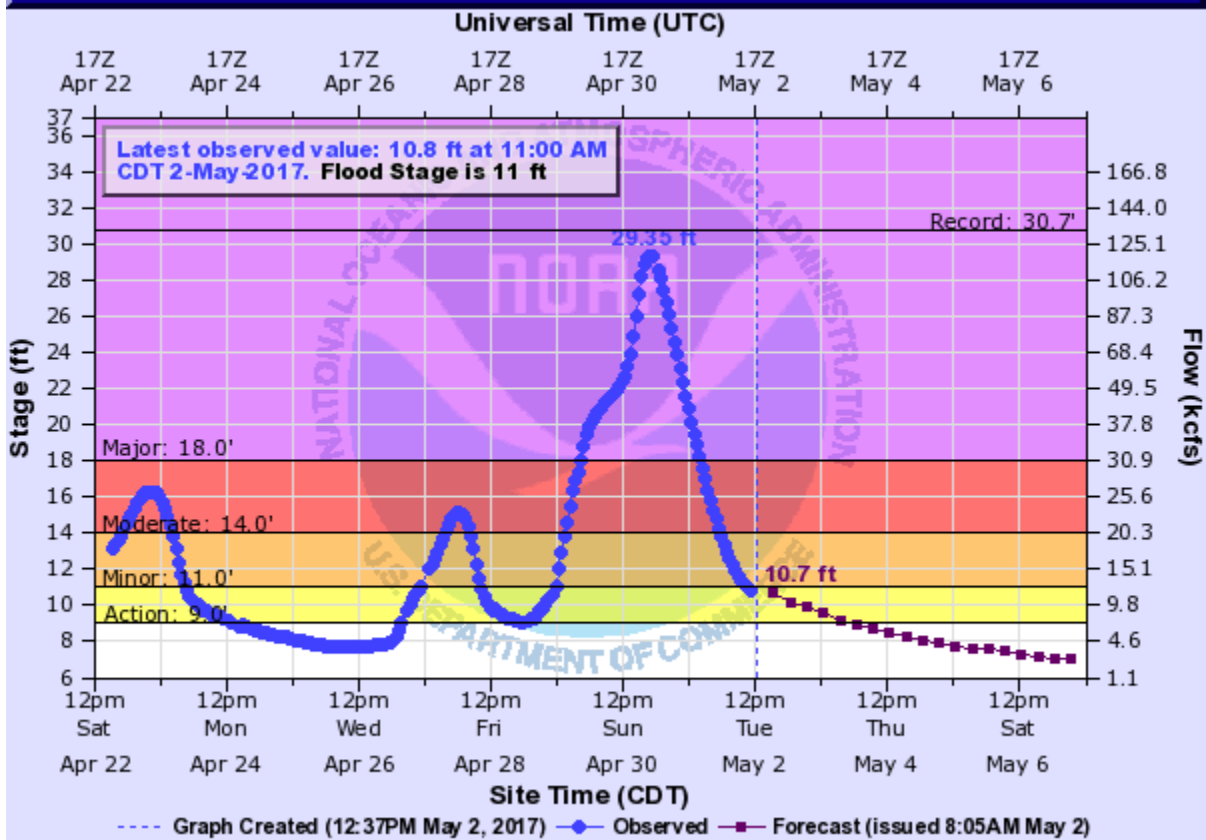
ILLINOIS RIVER (AR OK) AT CHEWEY



CWY02(plotting HGIRG) "Gage 0" Datum: 800.88'

Observations courtesy of US Geological Survey

ILLINOIS RIVER (AR OK) NEAR TAHLEQUAH

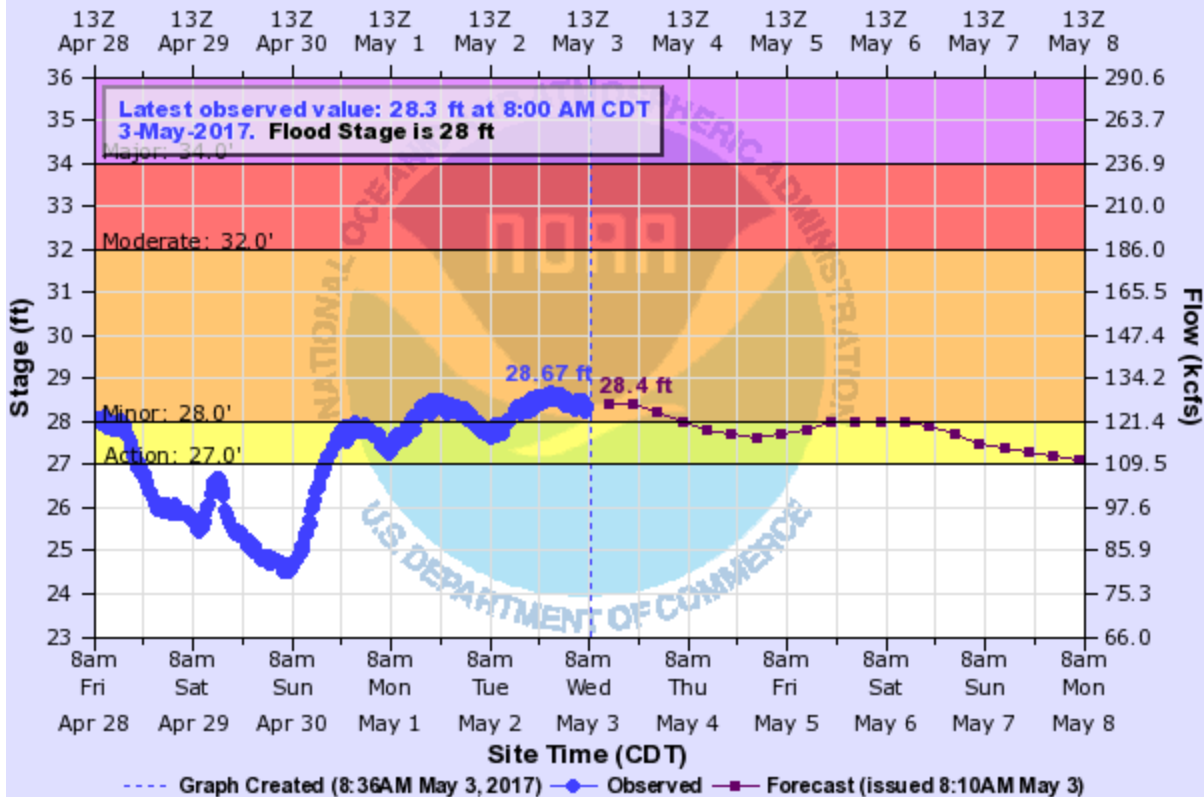


TAL02(plotting HGIRG) "Gage 0" Datum: 664.14'

Observations courtesy of US Geological Survey

ARKANSAS RIVER NEAR MUSKOGEE

Universal Time (UTC)

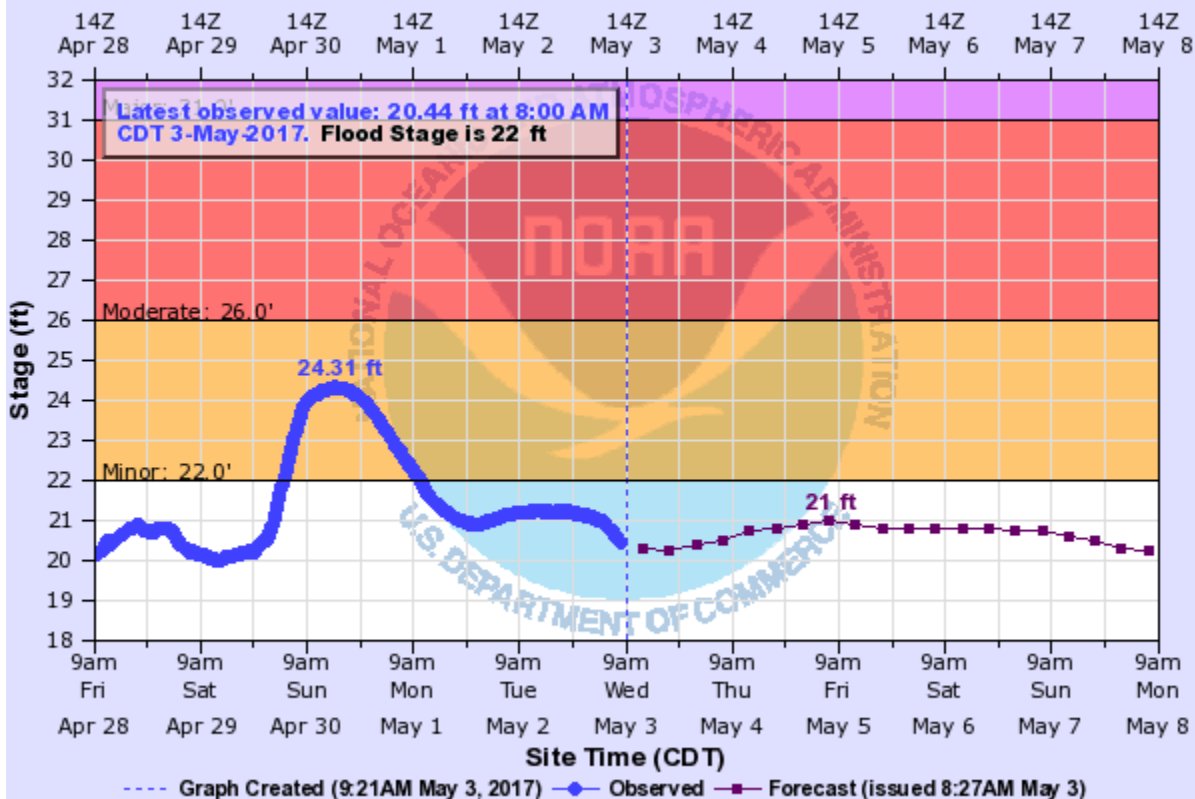


MKGO2(plotting HGIRG) "Gage 0" Datum: 471.38'

Observations courtesy of US Geological Survey

ARKANSAS RIVER AT VAN BUREN

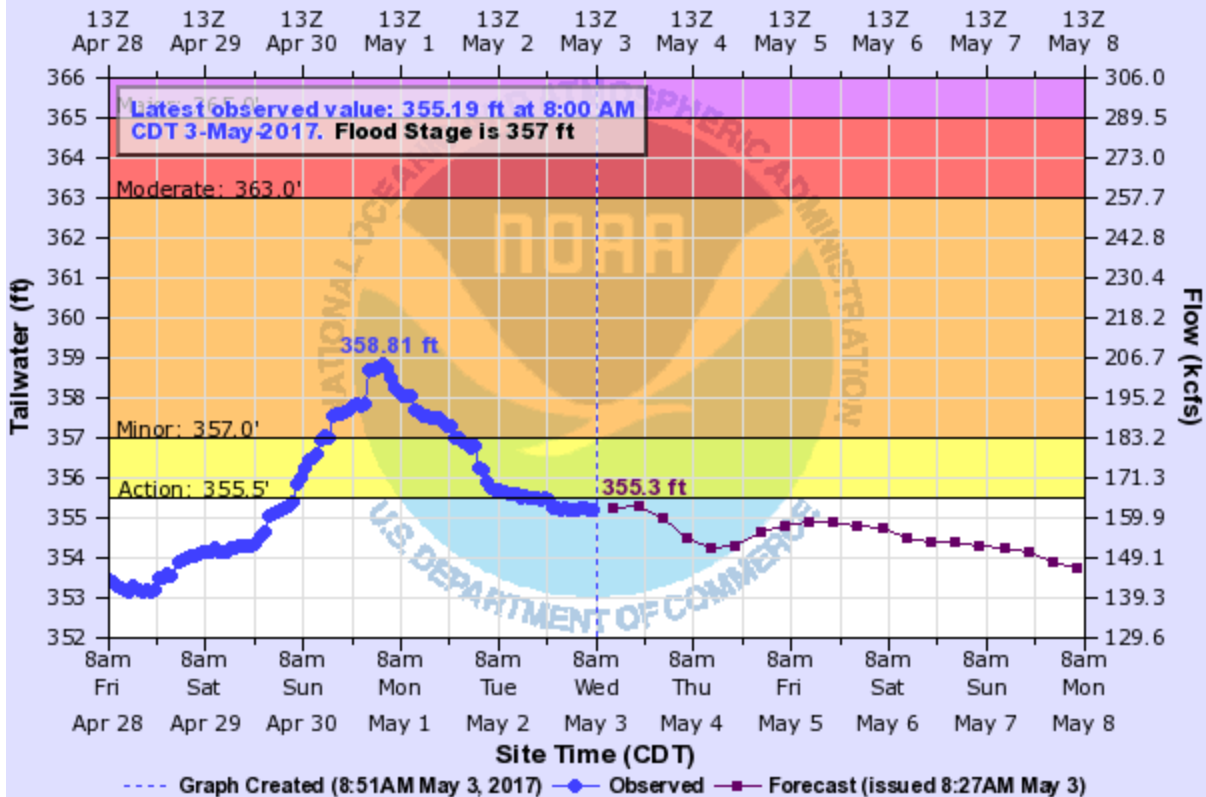
Universal Time (UTC)



VBUA4(plotting HGIRG) "Gage 0" Datum: 372.36'

ARKANSAS RIVER AT OZARK L/D TAILWATER

Universal Time (UTC)

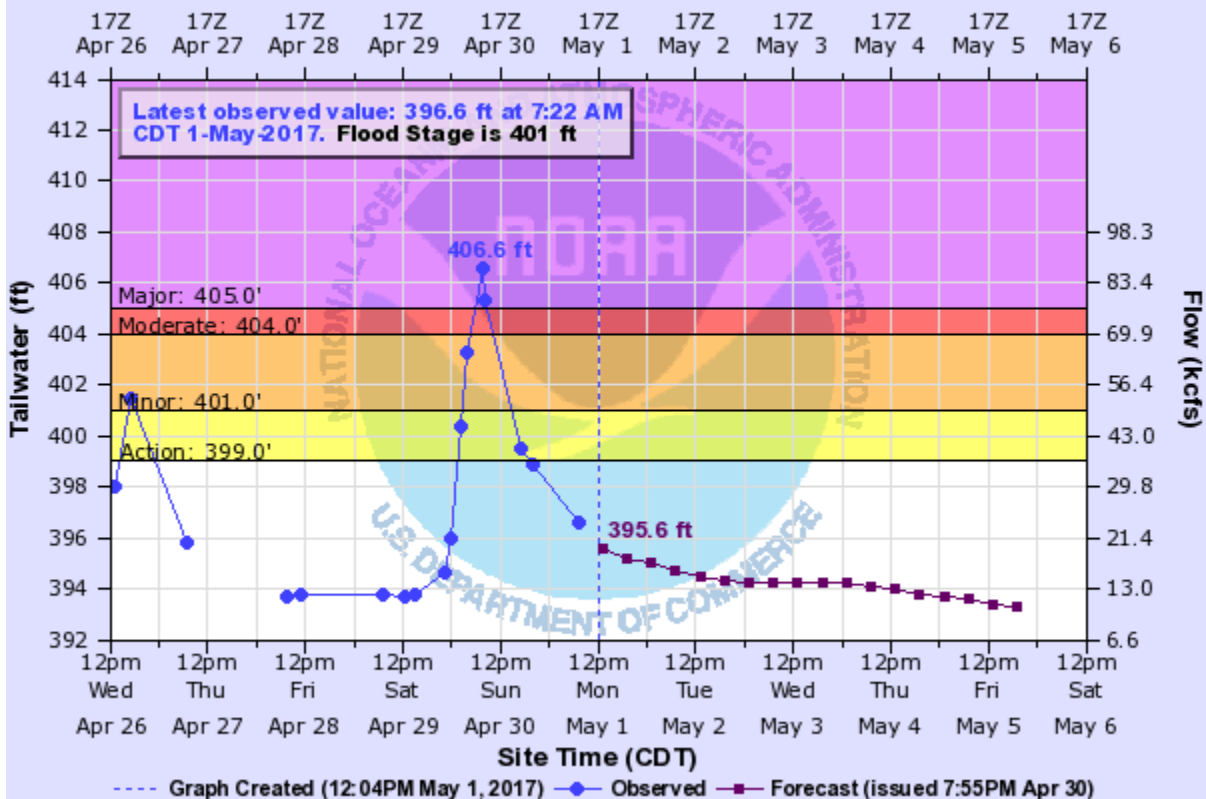


OZGA4(plotting HTIRG) "Gage 0" Datum: 0'

Observations courtesy of US Army Corps of Engineers - LRD

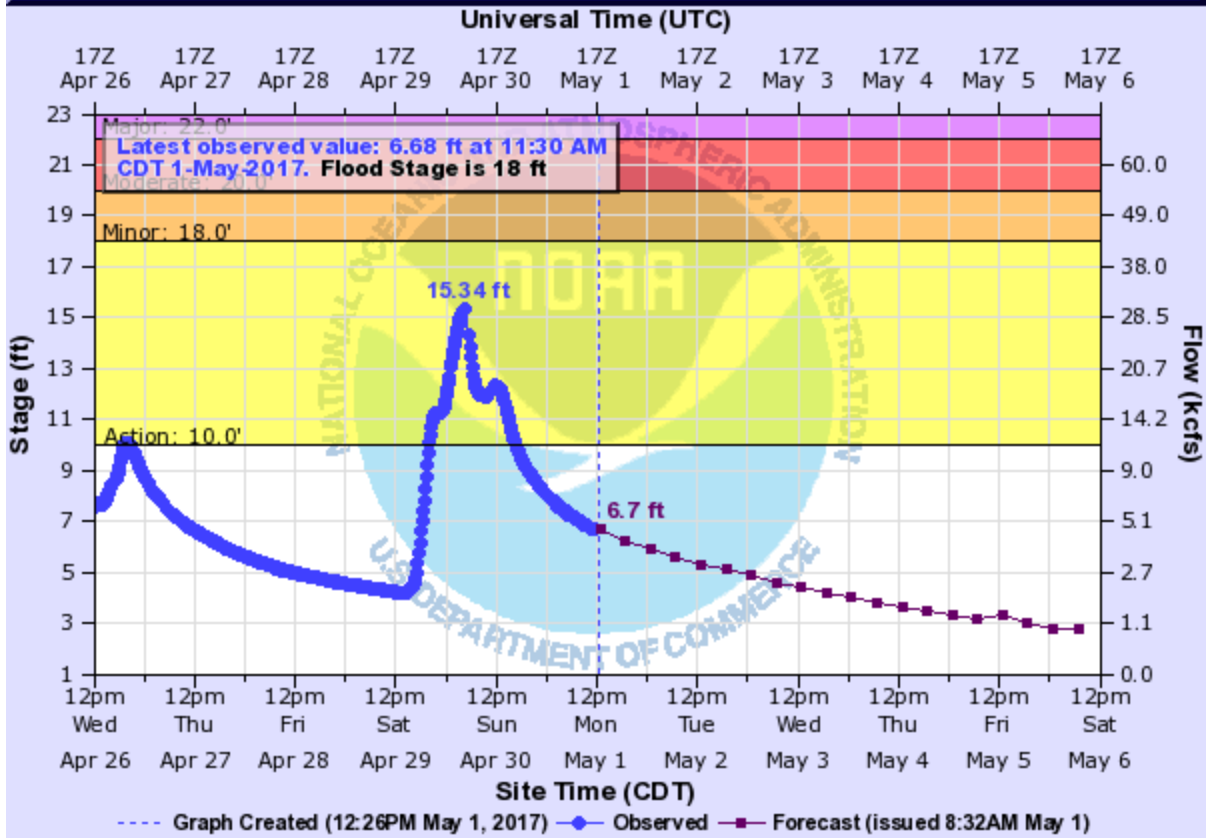
LEE CREEK NEAR VAN BUREN LCR

Universal Time (UTC)



VBRA4(plotting HTIRZ) "Gage 0" Datum: 0'

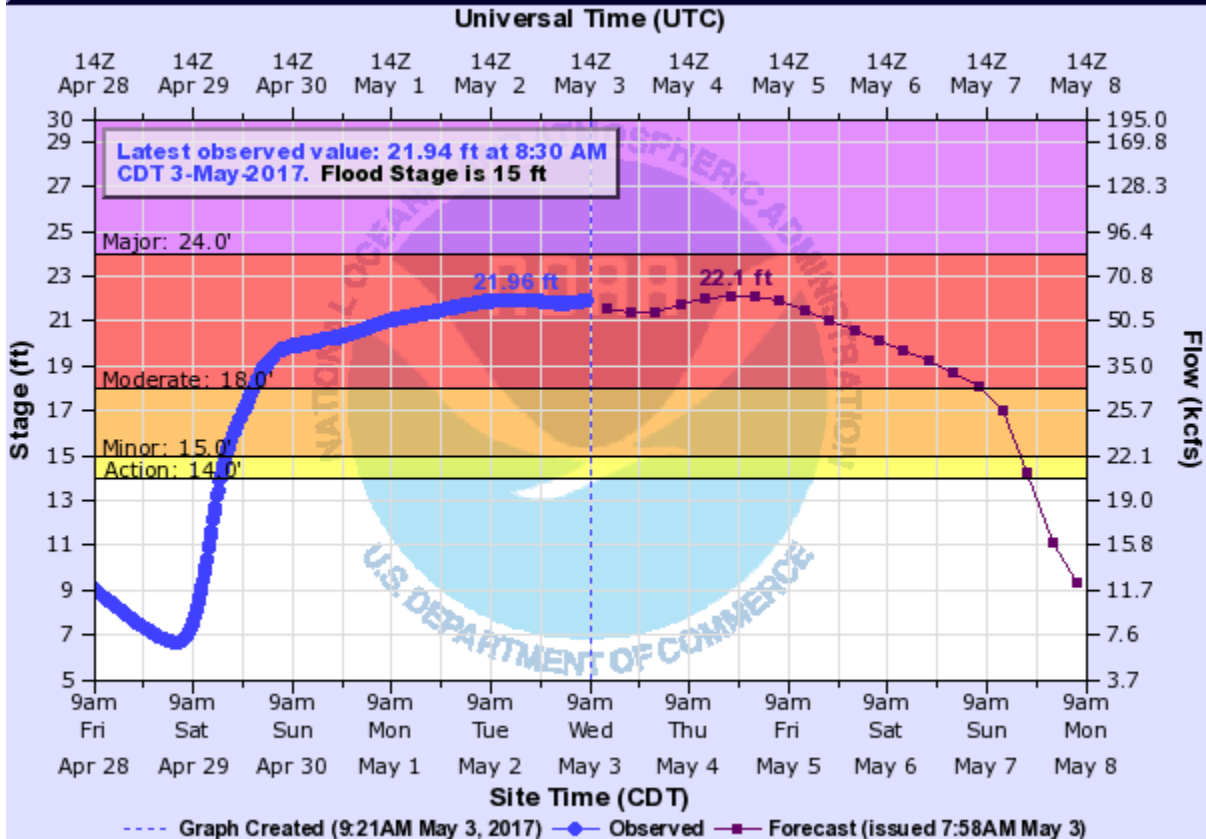
MULBERRY RIVER (AR) NEAR MULBERRY



MLBA4(plotting HGIRG) "Gage 0" Datum: 432.75'

Observations courtesy of USGS/USACE/ADEQ

NEOSHO RIVER NEAR COMMERCE

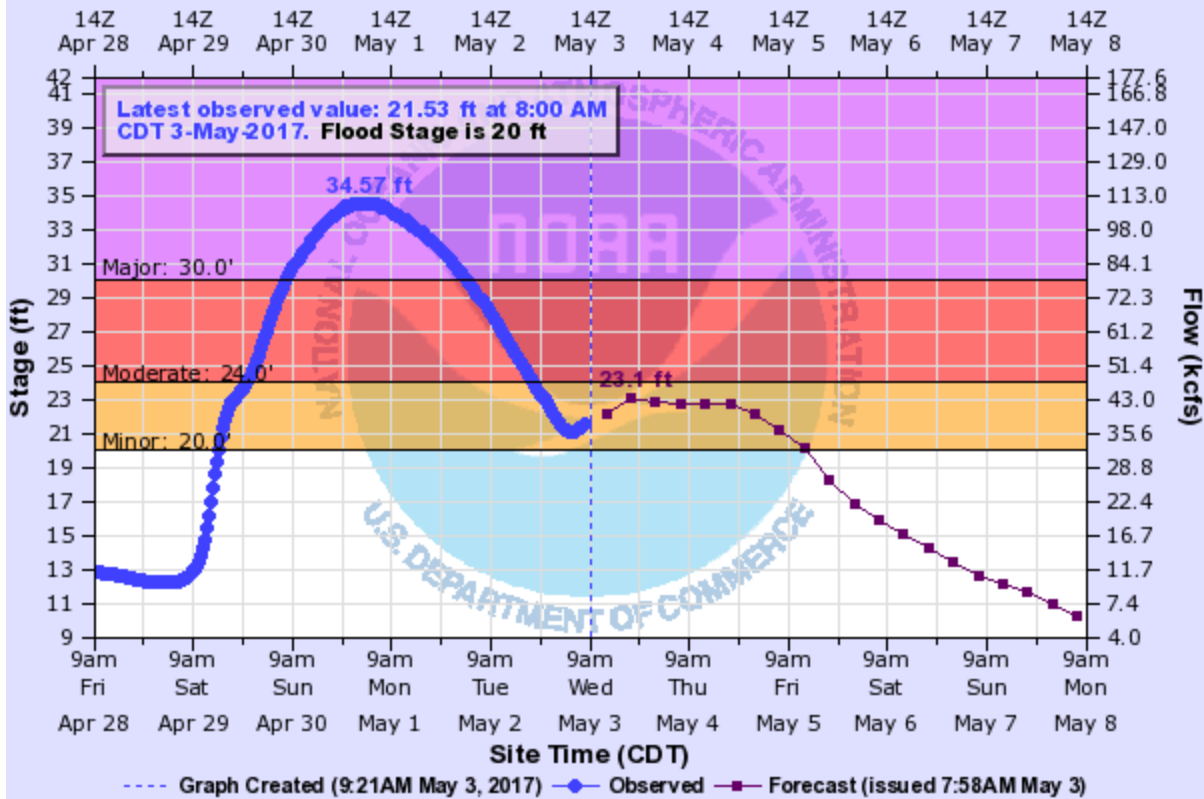


COMO2(plotting HGIRG) "Gage 0" Datum: 748.97'

Observations courtesy of US Geological Survey

SPRING RIVER NEAR QUAPAW

Universal Time (UTC)

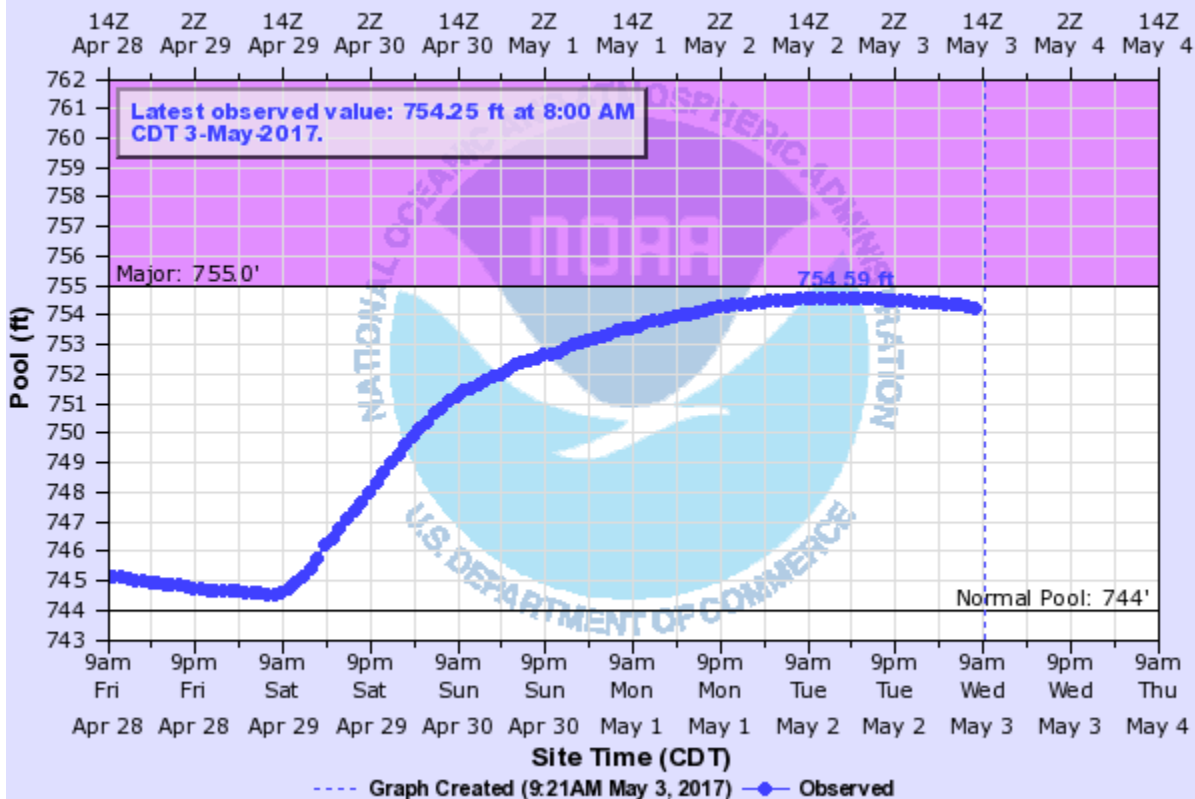


QUAO2(plotting HGIRG) "Gage 0" Datum: 746.25'

Observations courtesy of US Geological Survey

EASTERN OKLAHOMA LAKES AT GRAND LAKE

Universal Time (UTC)

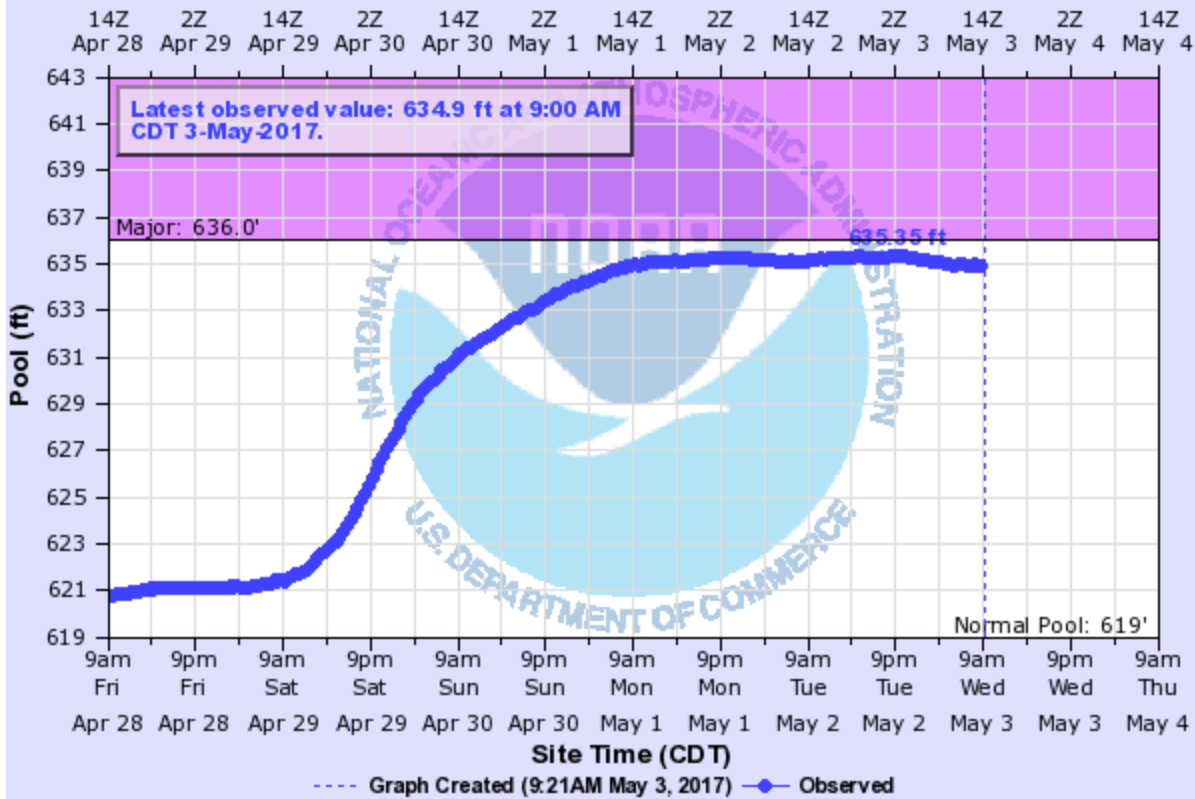


PEN02(plotting HPIRG) "Gage 0" Datum: 0'

Observations courtesy of US Army Corps of Engineers

EASTERN OKLAHOMA LAKES AT HUDSON LAKE

Universal Time (UTC)

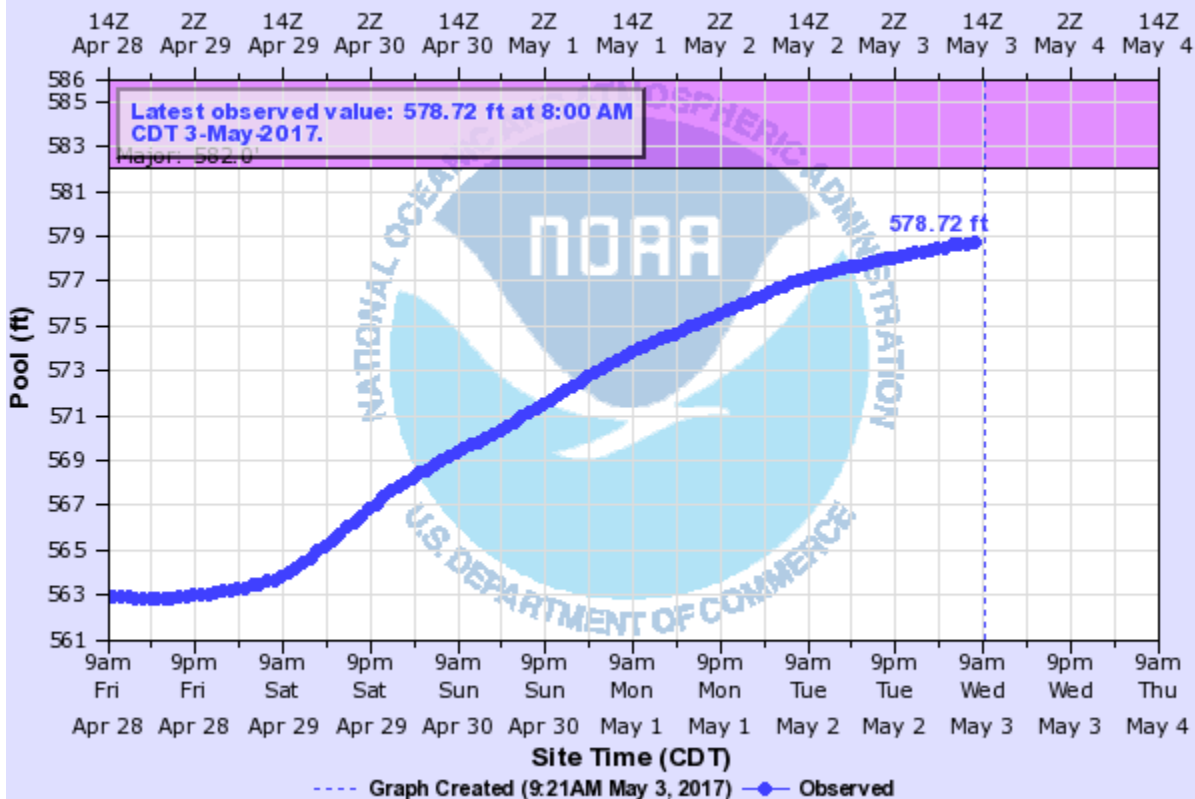


MFDO2(plotting HPIRG) "Gage 0" Datum: 0'

Observations courtesy of US Army Corps of Engineers

EASTERN OKLAHOMA LAKES AT FT. GIBSON LAKE

Universal Time (UTC)

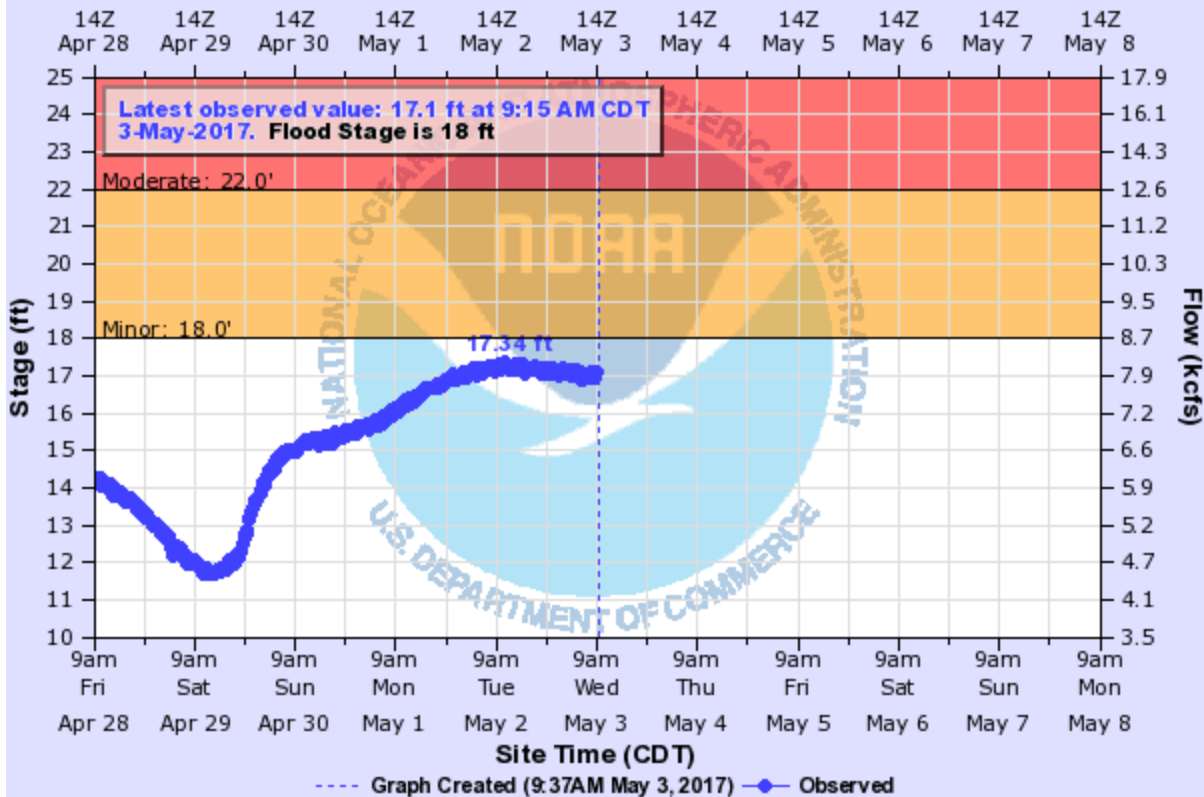


GIBO2(plotting HPIRG) "Gage 0" Datum: 0'

Observations courtesy of US Army Corps of Engineers

DEEP FORK RIVER NEAR BEGGS

Universal Time (UTC)

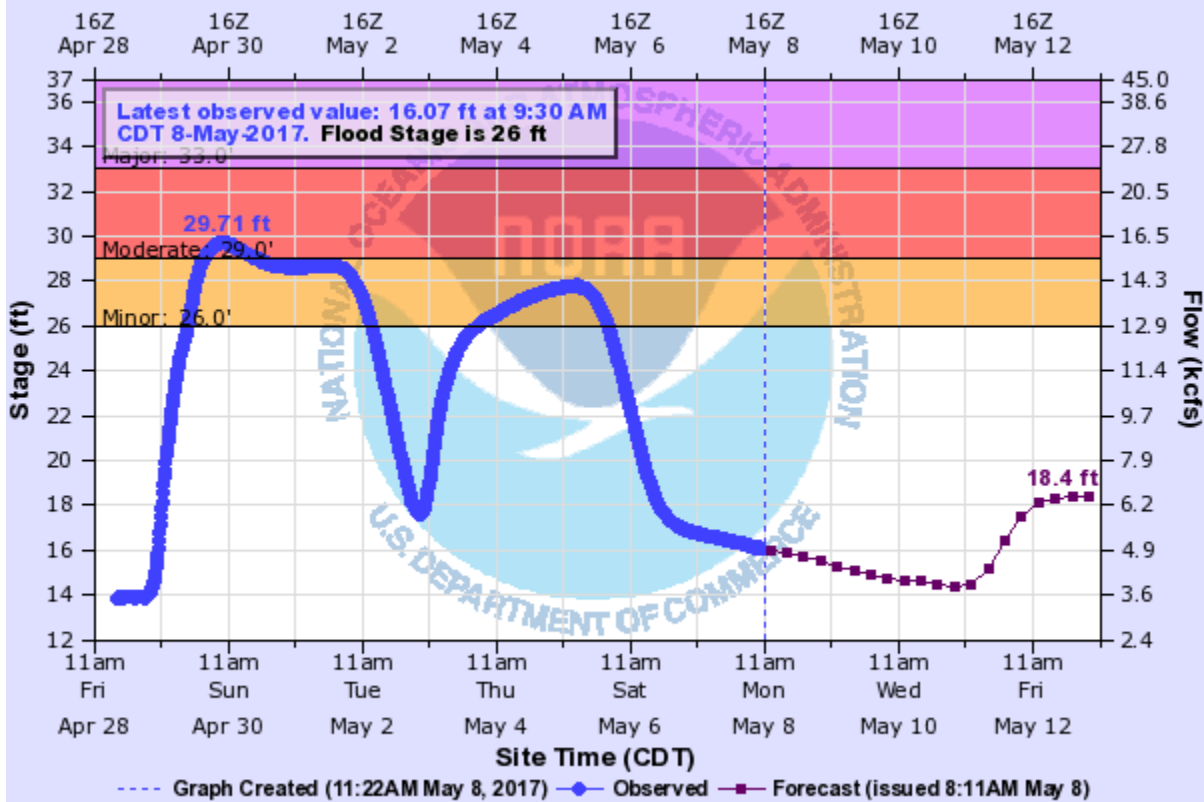


BGS02(plotting HGIRG) "Gage 0" Datum: 632.55'

Observations courtesy of US Geological Survey

CANEY RIVER NEAR COLLINSVILLE

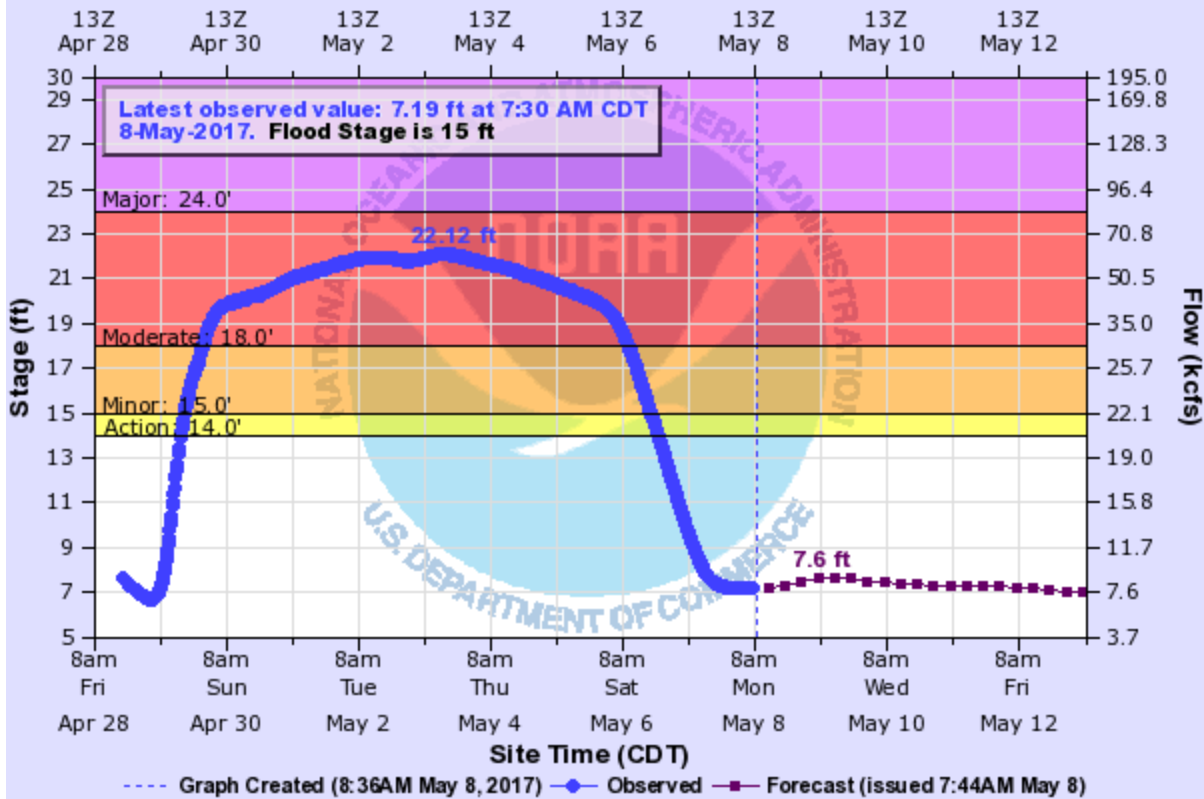
Universal Time (UTC)



CVL02(plotting HGIRG) "Gage 0" Datum: 565.72'

NEOSHO RIVER NEAR COMMERCE

Universal Time (UTC)

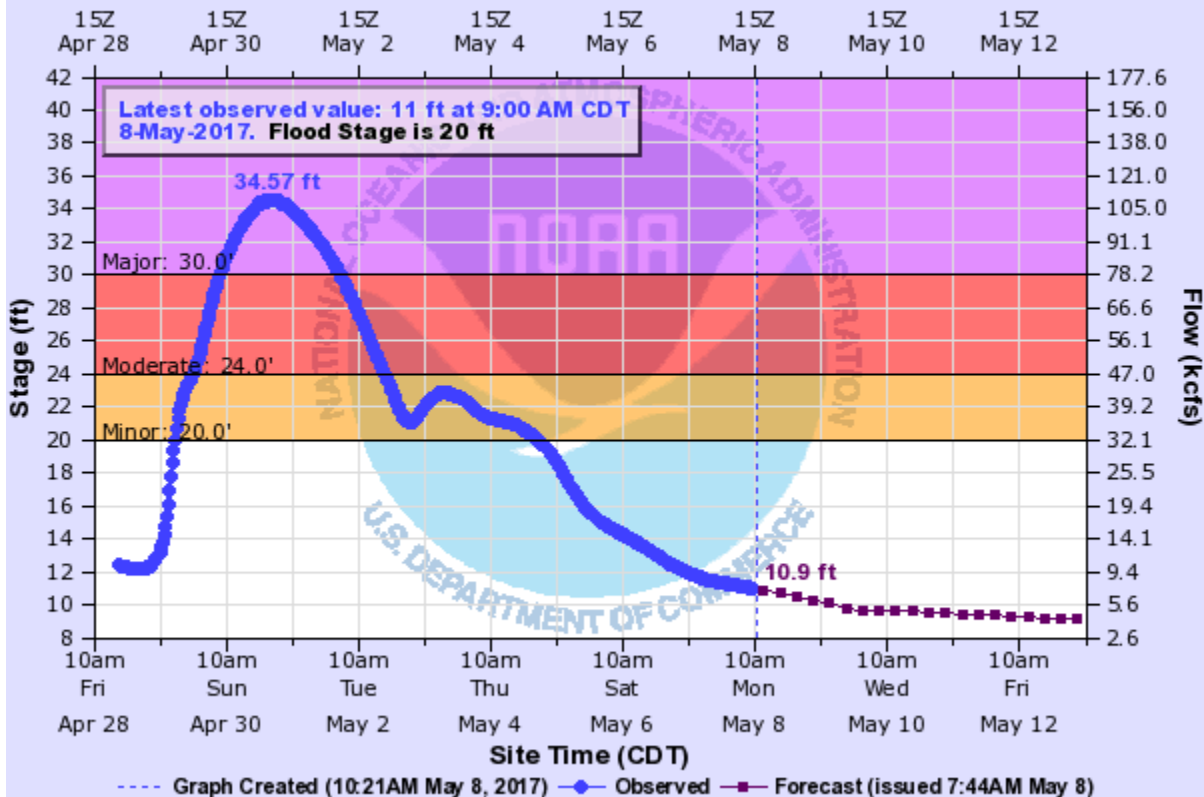


COMO2(plotting HGIRG) "Gage 0" Datum: 748.97'

Observations courtesy of US Geological Survey

SPRING RIVER NEAR QUAPAW

Universal Time (UTC)

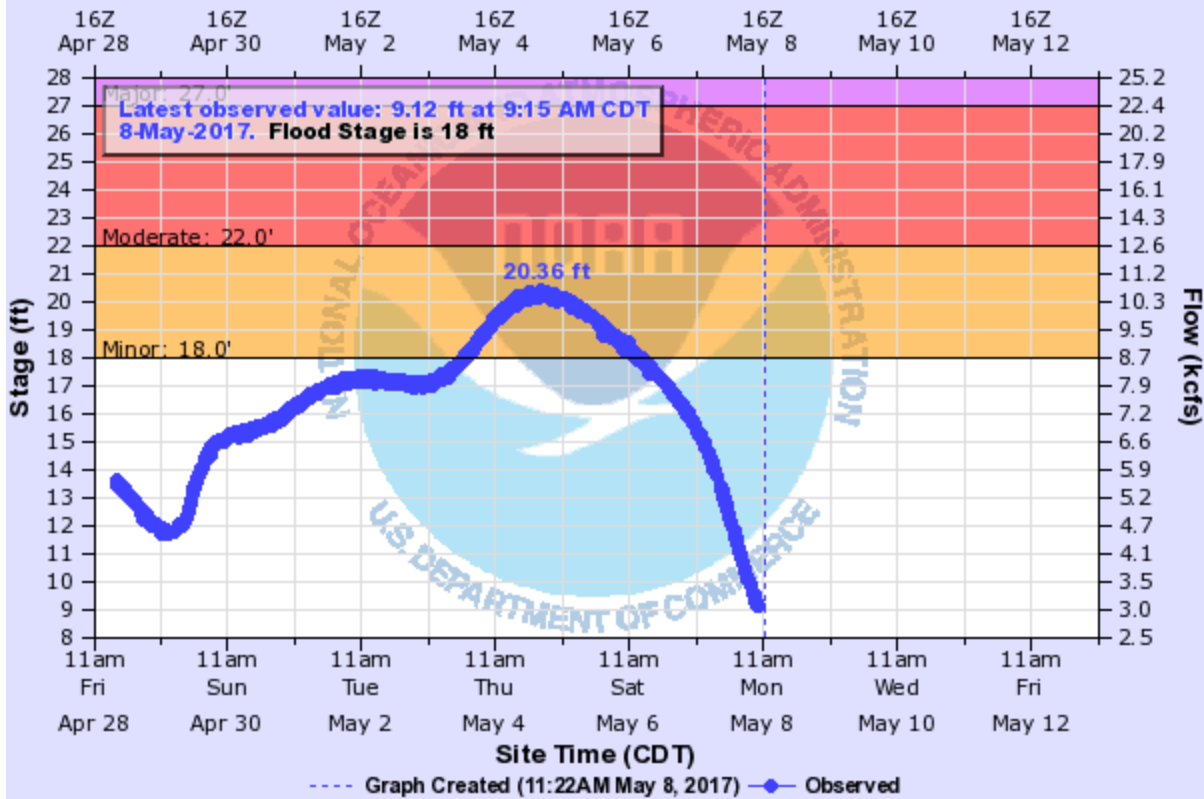


QUAO2(plotting HGIRG) "Gage 0" Datum: 746.25'

Observations courtesy of US Geological Survey

DEEP FORK RIVER NEAR BEGGS

Universal Time (UTC)

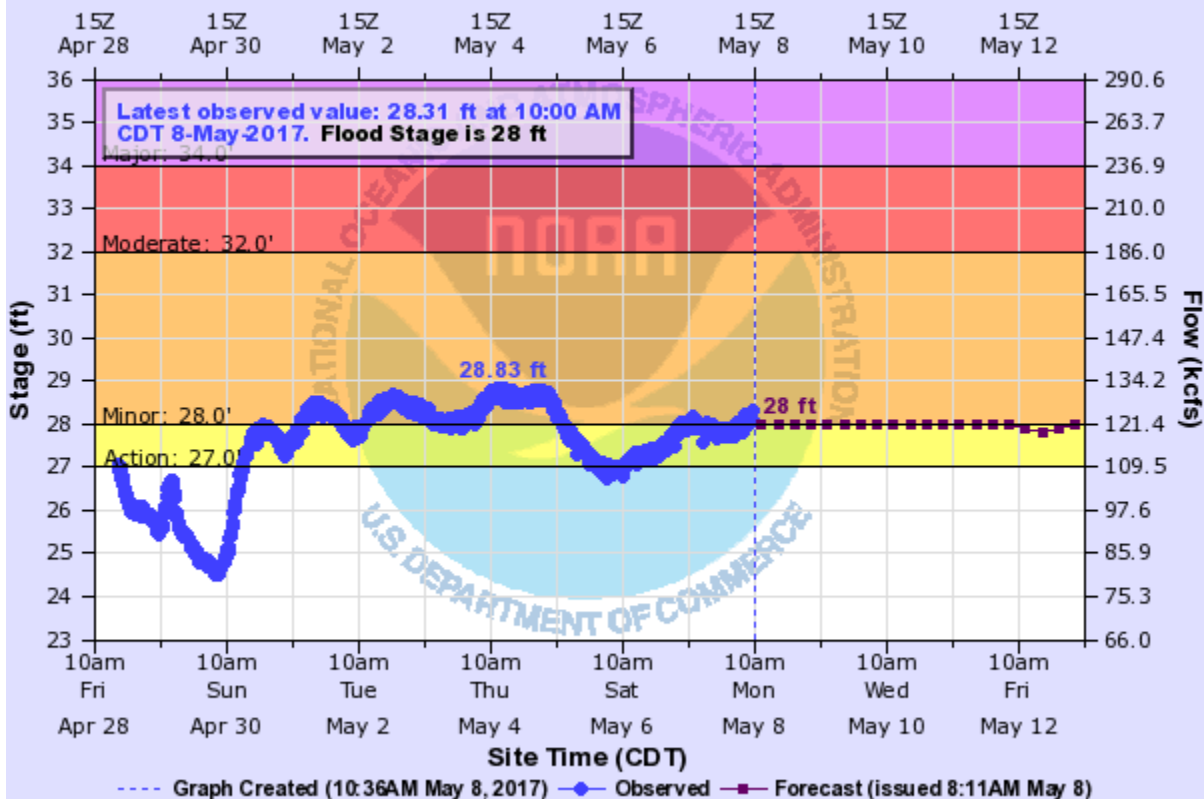


BGSO2(plotting HGIRG) "Gage 0" Datum: 632.55'

Observations courtesy of US Geological Survey

ARKANSAS RIVER NEAR MUSKOGEE

Universal Time (UTC)

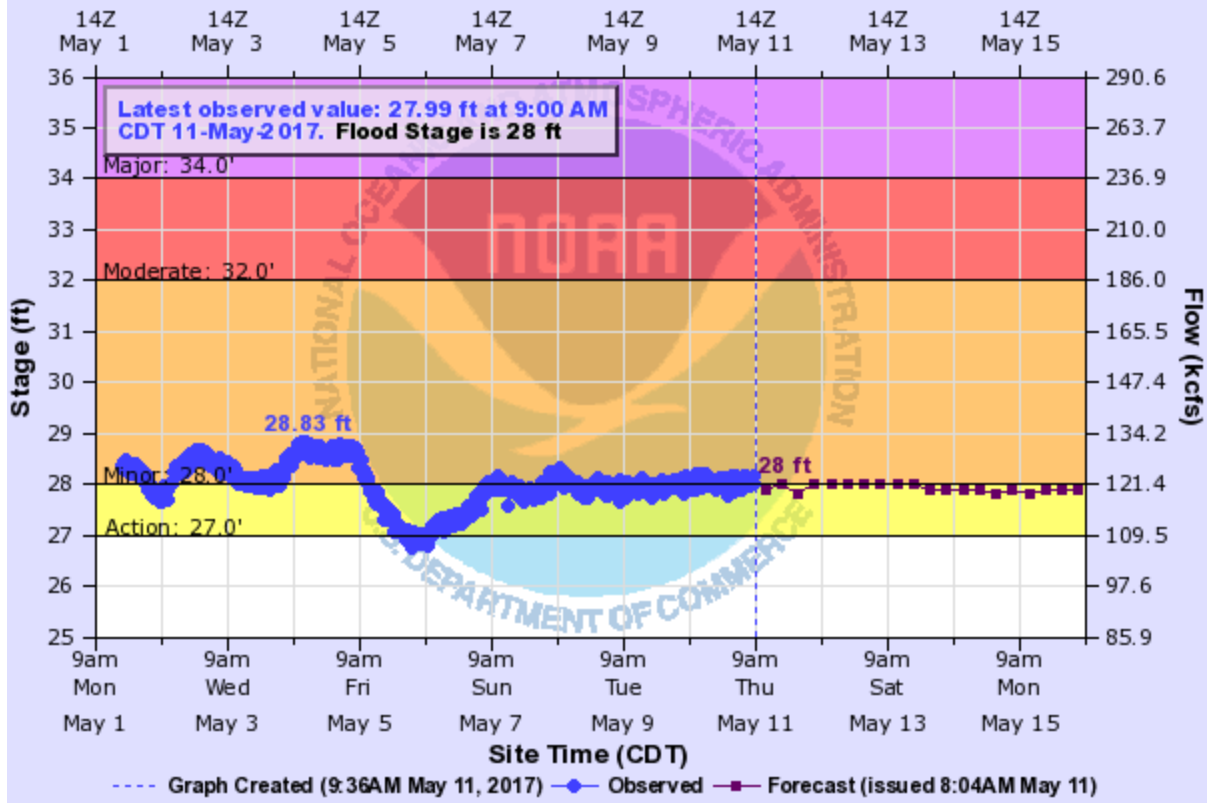


MKGO2(plotting HGIRG) "Gage 0" Datum: 471.38'

Observations courtesy of US Geological Survey

ARKANSAS RIVER NEAR MUSKOGEE

Universal Time (UTC)



MKGO2(plotting HGIRG) "Gage 0" Datum: 471.38'

Observations courtesy of US Geological Survey