



National Weather Service
Greenville-Spartanburg

2018 Winter/Spring Flood Outlook #4

Issued February 23, 2018

The fourth 2018 Winter/Spring Flood Outlook analyzes slight adjustments to expectations through April based on slightly wetter conditions across the North Carolina Foothills and slightly drier conditions across the South Carolina and Georgia Piedmont but is otherwise unchanged following an anomalously wet first half to February...

About This Product

Every two weeks from January through mid-March, NWS Greenville-Spartanburg (GSP) issues a Flood Outlook for the entire service area (see county-to-region legend at the end of this outlook for a list of counties serviced by NWS GSP). These outlooks forecast the potential for runoff, small stream, and mainstem river flooding through late April, or the end of the winter recharge season. The outlook is prepared based on an assessment of several hydrometeorological factors, including recent and forecasted precipitation and observed soil moisture, groundwater levels, streamflows, reservoir levels, and recent flooding events.

This product and an archive of past Flood Potential Outlooks are also located at:

<http://weather.gov/gsp/floodoutlook>

For additional hydrological and meteorological information please visit:

<http://weather.gov/gsp/hydro>

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CLIMATOLOGY and SEASON to DATE...
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The mainstem river flood season typically begins in late December. The quantity, frequency, magnitude, and significance of river flood events often increases through late winter with a peak in early to mid-March. While the mainstem river flood season typically ends by late April for the region, small-stream flash flooding can occur year-round.

This season, the mainstem flood season began prematurely in October across the western North Carolina mountains; however, a dry fall and early winter resulted in the development of drought conditions across the Piedmont. Outside of the Blue Ridge Escarpment, January 2018 was a dry month for the remainder of the region, especially across the western Piedmont, where precipitation totals were generally 50-75% of normal. This exacerbated below-normal hydrologic parameters, especially with respect to soil moisture and streamflows and combined with weak long-range signals for precipitation, suggested below-normal flood potential across the Piedmont.

However, February 2018 began very wet in response to a more active northern jet stream and the return of a southern jet stream which traditionally brings additional moisture and energy into the region. Several weak to average-strength storm systems through the first ten days of the month produced regionwide precipitation totals equivalent to 150-350% of normal for the month-to-date, with the highest deviations across Upstate South Carolina. The active pattern culminated by February 12th with a more potent system that produced heavy rainfall totaling 2-6 inches across the mountains and Foothills. The primed soils and elevated streamflows due to the earlier systems exacerbated runoff, causing scattered minor flooding of small streams as well as the upper Catawba, Little Tennessee and French Broad mainstems. As a result of all of these systems, lingering drought conditions across nearly all of the area have been eliminated.


Since the active weekend of February 10-12th, the upper-level pattern has transitioned from an unsettled but flat (i.e., low-energy) progressive flow to a highly anomalous and persistent subtropical ridge which has resulted in record warmth across the southeast and kept heavy rainfall west of the region. This record warmth has jump-started spring green-up, which means from now on, rising evapotranspiration rates will increase demands on water storages and heavier or more frequent rainfall will be required to induce previously observed runoff rates. Nevertheless, the ridge will breakdown and the pattern will once again become more active by early March, increasing opportunities for additional moderate to perhaps heavy rainfall, especially across the Foothills and mountains. Predictability of rainfall anomalies beyond early March will be very difficult given a lack of strong and/or consistent signals during what is typically a volatile time of year.

Therefore, the overall flood outlook for late winter and spring 2018 has remained largely unchanged across the region with this latest update. Slight downward adjustments to the flood potential across the western Piedmont have been made to account for the relative dryness there over the past two weeks, anomalous warmth leading to early green-up, and less confidence that the region will receive normal rainfall in the next 1-2 weeks.

14-DAY OBSERVED PRECIPITATION and FLOODING...

REGION	OBSERVED PRECIP 2/9-2/13 (in)	% OF NORMAL 2/9-2/13	MAINSTEM FLOODING 2/9-2/13	SMALL STREAM FLOODING 2/9-2/13
NC Piedmont	0.10-1.50	5- 75	None	None
NC Foothills	1.00-3.75	50-175	Iso. Minor	Iso. Minor
NC Northern Mnts	1.75-4.00	75-175	NA	None
NC Central Mnts	0.75-6.00	75-250	None	None
NC Southern Mnts	2.25-7.00	100-250	Scttrd. Minor	Scttrd. Minor
SC Mountains	3.00-6.00	125-225	NA	None
SC Foothills	0.75-3.25	50-150	None	None
SC Piedmont	0.25-1.25	5- 75	None	None
GA NE Mountains/ Foothills	1.50-6.25	110-225	None	None
GA Piedmont	0.50-2.00	10- 90	None	None

Measured Precipitation – January 2018



Greenville-Spartanburg Service Area
Select Precipitation Totals for January 2018
For the Period from December 31, 2017 at 7am to January 31, 2018 at 7am

City	County	State	Monthly Precip	Monthly Normal	Monthly Departure	Monthly PoN	YTD Precip	YTD Normal	YTD Departure	YTD PoN	Driest Rank	Wettest Rank	Records Began
			For Jan 2018	For Jan 2018	For Jan 2018	For Jan 2018	Thru Jan 31, 2018	Thru Jan 31, 2018	Thru Jan 31, 2018	Thru Jan 31, 2018	For Jan 2018	For Jan 2018	
Elberton	Elbert	GA	5.07	4.32	0.75	117%	5.07	4.32	0.75	117%	>25th	>25th	1891
Carnesville	Franklin	GA	4.20	4.36	-0.16	96%	4.20	4.36	-0.16	96%	>25th	>25th	1948
Clarkesville	Habersham	GA	3.96	5.71	-1.75	69%	3.96	5.71	-1.75	69%	7th	21st	1990
Hartwell	Hart	GA	4.51	4.30	0.21	105%	4.51	4.30	0.21	105%	>25th	>25th	1908
Clayton	Rabun	GA	6.80	6.30	0.50	108%	6.80	6.30	0.50	108%	>25th	>25th	1893
Toccoa	Stephens	GA	4.45	5.37	-0.92	83%	4.45	5.37	-0.92	83%	>25th	>25th	1892
Taylorsville	Alexander	NC	3.04	4.66	-1.62	65%	3.04	4.66	-1.62	65%	10th	15th	1994
Beech Mtn	Avery	NC	4.21	3.86	0.35	109%	4.21	3.86	0.35	109%	13th	15th	1991
AVL Airport	Buncombe	NC	4.04	3.67	0.37	110%	4.04	3.67	0.37	110%	>25th	17th	1946
Concord	Cabarrus	NC	3.60	3.62	-0.02	99%	3.60	3.62	-0.02	99%	>25th	>25th	1891
Lenoir	Caldwell	NC	3.32	3.53	-0.21	94%	3.32	3.53	-0.21	94%	>25th	>25th	1871
Hickory	Catawba	NC	3.26	3.83	-0.57	85%	3.26	3.83	-0.57	85%	>25th	>25th	1949
Shelby	Cleveland	NC	2.35	4.04	-1.69	58%	2.35	4.04	-1.69	58%	15th	>25th	1893
Waynesville	Haywood	NC	2.46	4.31	-1.85	57%	2.46	4.31	-1.85	57%	>25th	>25th	1894
Cullowhee	Jackson	NC	3.14	4.65	-1.51	68%	3.14	4.65	-1.51	68%	>25th	>25th	1909
Lincolnton	Lincoln	NC	2.33	3.85	-1.52	61%	2.33	3.85	-1.52	61%	17th	>25th	1952
Franklin	Macon	NC	2.48	5.10	-2.62	49%	2.48	5.10	-2.62	49%	12th	>25th	1872
Marshall	Madison	NC	1.60	3.05	-1.45	52%	1.60	3.05	-1.45	52%	20th	>25th	1898
Marion	McDowell	NC	6.34	4.06	2.28	156%	6.34	4.06	2.28	156%	>25th	13th	1893
CLT Airport	Mecklenburg	NC	2.56	3.41	-0.85	75%	2.56	3.41	-0.85	75%	25th	>25th	1939
Tryon	Polk	NC	5.36	5.10	0.26	105%	5.36	5.10	0.26	105%	>25th	>25th	1917
Cherokee	Swain	NC	2.79	4.87	-2.08	57%	2.79	4.87	-2.08	57%	9th	>25th	1958
Monroe	Union	NC	4.47	3.99	0.48	112%	4.47	3.99	0.48	112%	>25th	>25th	1896
Antreville	Abbeville	SC	3.81	4.33	-0.52	88%	3.81	4.33	-0.52	88%	>25th	>25th	1952
Anderson	Anderson	SC	3.08	3.85	-0.77	80%	3.08	3.85	-0.77	80%	22nd	>25th	1948
99 Islands	Cherokee	SC	2.40	3.79	-1.39	63%	2.40	3.79	-1.39	63%	16th	>25th	1940
Chester	Chester	SC	4.01	4.13	-0.12	97%	4.01	4.13	-0.12	97%	>25th	>25th	1922
GRD Airport	Greenwood	SC	3.96	3.96	0.00	100%	3.96	3.96	0.00	100%	14th	5th	2000
Laurens	Laurens	SC	4.62	4.06	0.56	114%	4.62	4.06	0.56	114%	>25th	>25th	1901
Walhalla	Oconee	SC	4.83	4.97	-0.14	97%	4.83	4.97	-0.14	97%	>25th	>25th	1896
Chesnee	Spartanburg	SC	2.82	3.97	-1.15	71%	2.82	3.97	-1.15	71%	22nd	>25th	1928
GSP Airport	Spartanburg	SC	2.86	3.82	-0.96	75%	2.86	3.82	-0.96	75%	13th	>25th	1962
Union	Union	SC	2.91	4.34	-1.43	67%	2.91	4.34	-1.43	67%	23rd	>25th	1949
Rock Hill	York	SC	2.75	3.59	-0.84	77%	2.75	3.59	-0.84	77%	13th	7th	1999

Table 1. Select precipitation totals (measurements) for January 2018 from the Western Carolinas and Northeast Georgia within NWS Greenville-Spartanburg's service area. For more details, refer to the table legend on the next page.

Select Precipitation Totals Legend

Drought classification assigned to each observing station is taken from the **January 30, 2018** U.S. Drought Monitor product and represents the highest category occupying at least 25% within the associated county. (<http://droughtmonitor.unL.edu/>)

D0	D1	D2	D3	D4
Abnrml Dry	Moderate	Severe	Extreme	Exceptional

All precipitation amounts are in Inches
Bolded Cites Represent Official Climate Stations

YTD = Year to Date

PoN = Percent of Normal

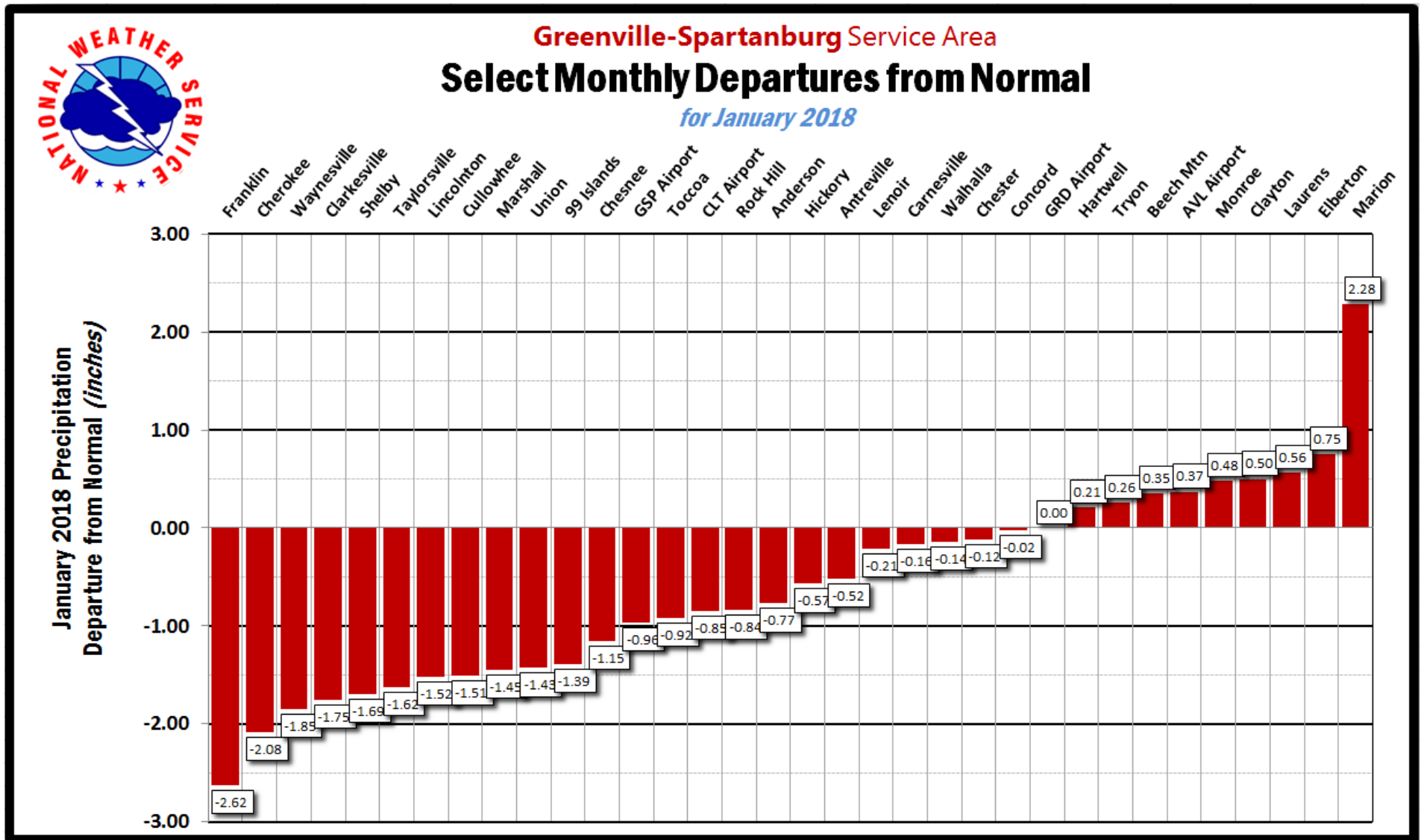


Figure 1. Monthly Departures from Normal for January 2018 from select measurement stations across the Western Carolinas and Northeast Georgia within NWS Greenville-Spartanburg’s service area.

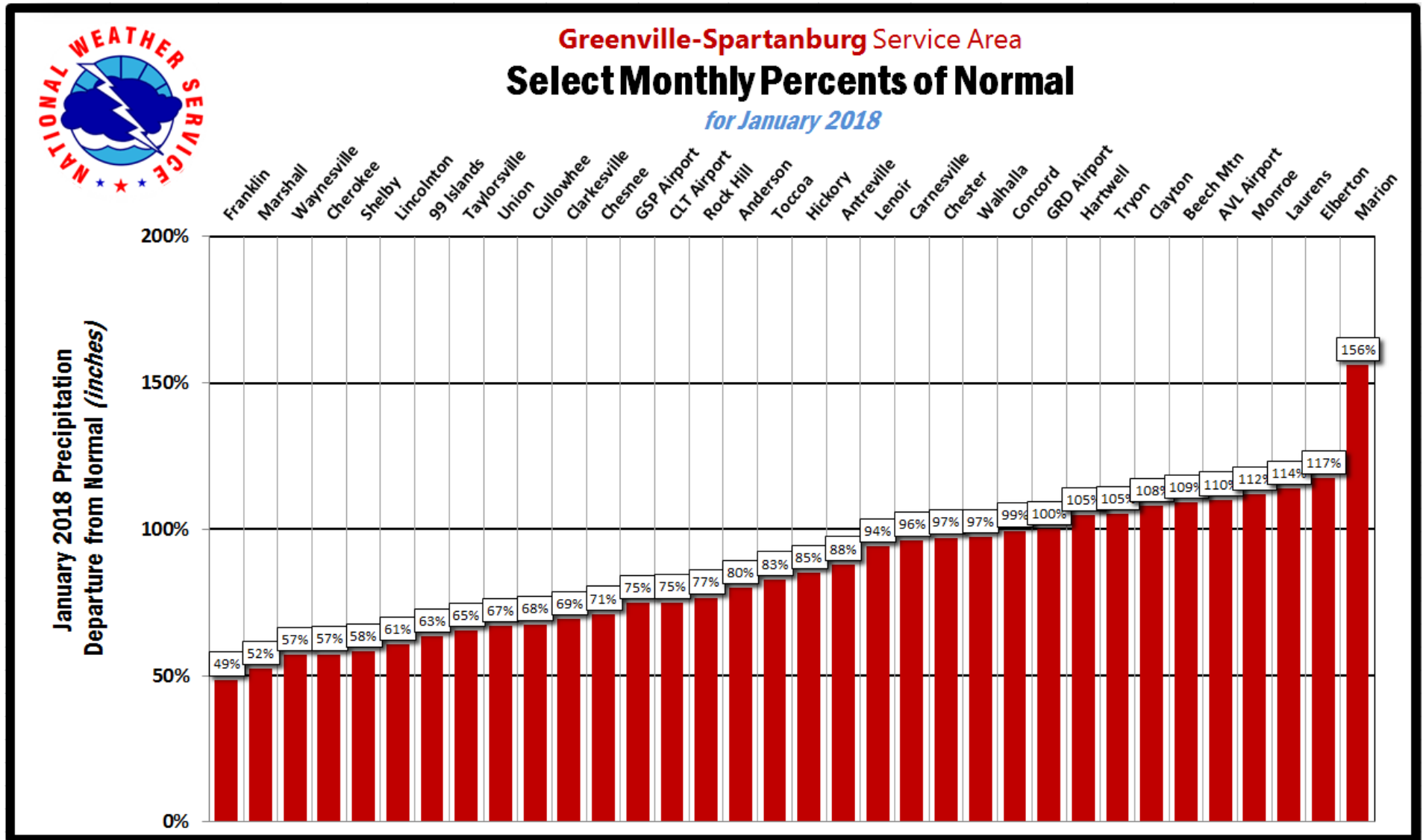


Figure 2. Monthly Percents of Normal for January 2018 from select measurement stations across the Western Carolinas and Northeast Georgia within NWS Greenville-Spartanburg’s service area.

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 SNOW DEPTH and FORECAST...
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REGION	SNOW DEPTH (in)	SNOW WATER EQUIVALENT (in)	7-DAY SNOWFALL FORECAST 2/23-3/5 (in)
NC Piedmont	None	None	None
NC Foothills	None	None	None
NC Northern Mnts	None	None	None
NC Central Mnts	None	None	None
NC Southern Mnts	None	None	None
SC Mountains	None	None	None
SC Foothills	None	None	None
SC Piedmont	None	None	None
GA NE Mountains/ Foothills	None	None	None
GA Piedmont	None	None	None

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 1-10 DAY FUTURE PRECIPITATION FORECAST and FLOOD POTENTIAL...
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REGION	10-DAY PRECIP 2/23-3/5 (in)	% OF NORMAL 2/23-3/5	MAINSTEM FLOOD PTNTL 2/23-3/5	SMALL STREAM FLOOD PTNTL 2/23-3/5
NC Piedmont	0.75-2.00	55-190	Near Zero	Near Zero
NC Foothills	1.50-3.00	95-240	Near Zero	Slight
NC Northern Mnts	1.50-3.50	85-280	NA	Near Zero
NC Central Mnts	1.00-4.00	70-375	Slight	Slight
NC Southern Mnts	1.50-4.50	85-375	Slight	Slight
SC Mountains	1.75-3.50	85-245	NA	Slight
SC Foothills	1.50-2.50	85-200	Near Zero	Slight
SC Piedmont	0.75-1.75	50-140	Zero	Near Zero
GA NE Mountains/ Foothills	1.75-3.50	70-220	Near Zero	Slight
GA Piedmont	1.00-1.75	60-120	Zero	Near Zero

DEFINITIONS:

Flood Potential	Zero	= No flood potential
Categories:	Near Zero	= Very low flood potential
	Slight	= Isolated Minor Flooding Possible
	Moderate	= Scattered Minor Flooding Likely; Isolated Moderate Flooding Possible
	Likely	= Scattered-Widespread Minor Flooding Likely; Isolated Moderate Flooding Possible
	Significant	= Scattered Moderate/Isolated Major Flooding Likely

 8-90 DAY PRECIPITATION OUTLOOKS...

REGION	8-14 DAY PRECIP OUTLOOK (3/2-3/9)	15-28 DAY PRECIP OUTLOOK (3/10-3/23)	APRIL 2018 PRECIP OUTLOOK
NC Piedmont	Near Normal	Near Normal	Slightly Above Nrml
NC Foothills	Near Normal	Near Normal	Slightly Above Nrml
NC Northern Mnts	Near Normal	Near Normal	Slightly Above Nrml
NC Central Mnts	Near Normal	Near Normal	Slightly Above Nrml
NC Southern Mnts	Near Normal	Near Normal	Slightly Above Nrml
SC Mountains	Near Normal	Near Normal	Slightly Above Nrml
SC Foothills	Near Normal	Near Normal	Near Normal
SC Piedmont	Near Normal	Near Normal	Near Normal
GA NE Mnts/ Foothills	Near Normal	Near Normal	Near Normal
GA Piedmont	Near Normal	Near Normal	Near Normal

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 HYDROLOGIC SUMMARY...
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 ..IMPORTANT NOTES...

It is very important to note that flash flooding and flooding of smaller tributaries is still very possible during periods of dry weather and/or drought. Several important and damaging flash floods were observed during previous drought periods. Residents are strongly encouraged to heed related flood advisories and warnings, even during significant drought.

The winter and early spring months are a critical time for the water system as widespread winter precipitation normally restores streamflows and reservoir levels following the spotty, convective nature of precipitation during the summer and the drier weeks of early fall. This recharge of the water system is critical for adequate water supply heading into the late spring and summer of 2018. When the winter begins in a significant drought, it takes a greater amount of precipitation to adequately complete this recharge.

 ..SOIL and CROP MOISTURE...

 ----- SOIL/CROP MOISTURE ESTIMATES -----

REGION	2/18 TOTAL^ COLUMN SOIL MOISTURE ANOMALY (mm)	2/18 SOIL MOISTURE %ile~ (%)	CHANGE FROM Feb 7 (mm)	2/17 SHORT-TERM CROP MOISTURE INDEX*
NC Piedmont	0 to - 50	20-50	0 to -25	+1 - +2, SAN
NC Foothills	0 to + 50	50-90	Little Chg	+2 - +3, Above Normal
NC Northern Mnts	+ 25 to + 50	50-90	0 to +25	+2 - +3, Above Normal
NC Central Mnts	0 to + 25	50-80	0 to +25	>+3, Well-Abv Nrml
NC Southern Mnts	+ 25 to +100	70-90	0 to +50	>+3, Well-Abv Nrml
SC Mountains/ Foothills	0 to + 50	50-90	0 to -25	+2 - +3, Above Normal
SC Piedmont	0 to - 50	20-50	0 to -50	+1 - +2, SAN
GA NE Mountains/ Foothills	0 to + 50	50-80	0 to +25	+1 - +2, SAN
GA Piedmont	+ 25 to - 25	30-70	0 to -25	+1 - +2, SAN

DEFINITIONS:

EVAPOTRANSPIRATION = The loss of moisture from the soil to the atmosphere plus the loss of moisture from the soil to vegetation.

INTERPRETATION = Note that above-normal temperatures and below-normal precipitation exacerbate the loss of soil moisture through evapotranspiration, while below-normal temperatures and above-normal precipitation mitigates soil-moisture deficits. However, heading into fall and winter, cooler temperatures and less-active or dormant vegetation reduce demands on the water system and while still important, the effects of above-normal temperatures and below-normal precipitation are lessened. Conversely, demands on the water system increase once vegetation emerges from dormancy during the late winter and evapotranspiration rates increase.

*CROP MOISTURE INDEX = Depicts short-term (< 1 month) dryness or wetness impacting agriculture. Negative values indicate dryness, while positive values indicate wetness. The index is not a depicter of medium-range (i.e., 1-6 months) to long-range (i.e., >6 months) wetness or drought.

SBN = Slightly Below Normal
SAN = Slightly Above Normal

^TOTAL COLUMN = Defined as a 2-meter depth (6.56ft) and derived from the North American Land Data Assimilation System (NLDAS) which is a joint modeling effort between the National Centers for Environmental Prediction and the National Aeronautics and Space Administration.

~PERCENTILES = Normal is defined as anywhere within the 30-70th percentiles, with above-normal or wet conditions >70th and below-normal or dry conditions <30th.

 ..GROUNDWATER*...

----- GROUNDWATER WELL MEASUREMENTS -----
 ----- Depth Below Ground Surface in Feet -----

COUNTY	LOCATION	CHANGE***RECORD			
		DEPTH* 2/22 (ft)	FEB** MEDIAN (ft)	SINCE 2/7 (ft)	LOWEST and LEVEL DATE (ft)
Caldwell	Granite Falls	17.42	19.92	-2.19	26.43, 03/23/17
Catawba	Oxford Resrch St	40.74	39.53	-0.40	42.09, 01/14/13
Gaston	Pasour Mtn	45.66	39.04	-0.01	45.72, 02/16/18
McDowell	Pleasant Gardens	26.90	29.09	-1.25	31.89, 11/29/10
Union (NC)	Mineral Springs	38.64	38.75	-0.20	42.70, 01/10/13
York	York Co Airport	26.45	25.50	-0.75	29.69, 12/13/12

COUNTY	LOCATION	CHANGE***			
		DEPTH* 2/22 (ft)	SINCE 2/7 (ft)	%ile **** (2/7)	RECORD LOWEST and LEVEL DATE (ft)
Anderson	Williamston	3.36	-0.14	10-25	5.98, 06/25/02
Burke	Glen Alpine	10.49	+0.04	50-75	13.84, 09/04/11
Cherokee	Marble	2.70	-0.62	75-90	15.16, 11/28/16
Chester	Leeds Road	89.49	+0.11	25-50	94.52, 01/12/14
Davie	Mocksville	18.27	-0.48	25-50	23.32, 08/24/02
Haywood	near Cruso	3.70	-0.80	75-90	6.96, 09/12/02
Iredell	Langtree	25.71	-1.13	< 1st	33.03, 11/02/17
Oconee	Oconee Statn Rd	28.82	-0.65	50-75	32.08, 12/31/08
Rowan	Barber	6.84	+0.42	50-75	11.15, 09/14/02
Spartanburg	Croft State Park	47.71	+0.10	25-50	51.69, 03/17/13
Transylvania	Blantyre	28.93	-0.91	50-75	42.19, 12/12/08
Transylvania	Pisgah Forest	11.91	-1.47	75-90	17.86, 08/25/08
White	Unicoi State Pk	4.11	-0.15	50-75	6.49, 09/28/98

DEFINITIONS:

* DEPTH = Note that groundwater is measured as depth below the surface, unlike streamflow and reservoir data which is the reverse or height above the surface. Therefore, the higher the depth value, the less the groundwater supply because the groundwater level is further from the surface.

**MEDIAN = Current depth values that are larger than the monthly median can be loosely correlated to drier-than-normal conditions while current depth values that are smaller than the monthly median can be loosely correlated to wetter-than-normal conditions.

***CHANGE = A POSITIVE CHANGE means the groundwater depth has increased or is further from the surface. Therefore, a NEGATIVE CHANGE means the groundwater depth has decreased or is closer to the surface.

In periods of drought, negative changes are ideal. However, positive changes are NORMAL during the late summer and early fall, as rainfall is typically isolated to scattered and less significant, causing losses to surface and subsurface water sources due to increased evapotranspiration, evaporation, and increased consumption, while negative changes are NORMAL during the late fall and winter, as widespread significant precipitation recharges surface and subsurface water sources and environmental demands are lower.

Note, however, that for many groundwater sites, the depth of the well is very deep and there is a lag between significant rainfall and deep infiltration into subsurface water supplies. If the rainfall is not significant or occurring over a sustained period of time, the water may never reach the groundwater wells. Additionally, if the rainfall is significant but occurring quickly and only once during a period of several weeks, a shallower groundwater well may spike and then return to near pre-rainfall levels.

PERCENTILE = The percentile (%ile) values can be interpreted as follows:

Less than 10th percentile	- Well-Below Normal
10th-25th percentile	- Below Normal
25th-50th percentile	- Slightly Below Normal/Near Normal
50th-75th percentile	- Slightly Above Normal/Near Normal
75th-90th percentile	- Above Normal
Greater than 90th percentile	- Well-Above Normal

The percentile values are computed monthly. Therefore, percentiles referenced in the chart above are for the month of January. Groundwater well statistics change throughout the water year such that the median monthly depth typically reaches a minimum in autumn and a peak in late spring. This can result in a dramatic change in the percentile of an observed depth from one month to the next, even if the observed depth does not change significantly.

 ..STREAMFLOW*...

----- 28-DAY AVERAGE USGS STREAMFLOW PERCENTILES BY REGION -----

REGION	% OF NORMAL (2/22)	%ILE (2/22)	%ILE (2/8)	CLASSIFICATION (2/8)
NC Piedmont	72-212	39-86	30-82	Slightly-Above Normal
NC Foothills	126-167	69-87	42-90	Above Normal
NC Northern Mnts	115-151	67-83	80-85	Slightly-Above Normal
NC Central Mnts	108-174	61-91	28-84	Above Normal
NC Southern Mnts	125-164	86-91	20-81	Above Normal
SC Mountains/ Foothills	111-198	65-92	41-74	Above Normal
SC Piedmont	86-151	52-82	30-77	Normal
GA NE Mountains/ Foothills	132-183	76-92	28-74	Above Normal
GA Piedmont	82-122	55-72	39-67	Normal

----- 28-DAY AVERAGE USGS STREAMFLOW PERCENTILES BY RIVER SYSTEM -----

RIVER BASIN	% OF NORMAL (2/22)	%ILE (2/22)	%ILE (2/8)	CLASSIFICATION (2/8)
Broad (GA)	82-109	55-65	39-55	Normal
Broad (NC/SC)/Pacolet	101-199	54-87	34-74	Above Normal (Upper/Pacolet) Normal (Lower)
Catawba	69-212	39-86	42-90	Above Normal (Upper)/ Normal (Lower)
Enoree/Tyger	86-168	52-85	30-73	Slightly Above Normal
French Broad	108-178	61-91	54-81	Above Normal
Nantahala/Tuckasegee/ Little Tennessee	125-172	72-90	20-59	Above Normal
Pigeon	144-174	81-91	32-84	Well-Above Normal
Rocky/Yadkin	72-212	39-86	30-82	Above Normal
Reedy/Saluda	93-198	57-92	38-74	Above Normal
Tallulah/Chattooga	147-183	81-92	28-74	Well-Above Normal
Toxaway/Keowee/ Savannah	103-148	64-83	29-61	Above Normal

DEFINITIONS...

*RESERVOIR INFLUENCE = Please note that streamflows along regulated rivers (i.e., rivers with reservoirs) may be influenced positively and/or negatively by the control of releases from those

reservoirs. For a list of mainstem rivers and their regulation influence, please see the bottom of this product.

 ..RESERVOIRS...

 POOL ELEVATIONS and DROUGHT STAGES

RESERVOIR	NWS ID	PEAK	AVG*	TARGET	2/22	2/22	2/22	2/22
		ELEV	ELEV	ELEV	ELEV-	MIN	MAX	DGT
		2/22	2/22	2/22	TARGET	ELEV*	ELEV	STGE
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	

BROAD SYSTEM

Summit	(None)	NA	99.7	97.5	+2.20	85.0	100.0	NA
Gaston Shoals	(BLAS1)		95.97	NA	NA	98.0	NA	NA
Ninety-Nine Isl	(NNIS1)	99.82	99.82	NA	NA	98.0	NA	NA

CATAWBA SYSTEM (As of 2/16, Total Reservoir Storage 134% of Target)

James	(BRWN7)	98.47	97.15	94.8	+2.35	92.0	100.0	ND
Rhodhiss	(RHON7)	101.73	97.17	97.0	+0.17	94.0	100.0	ND
Hickory	(OXFN7)	99.37	98.17	96.8	+1.37	94.0	100.0	ND
Lookout Shoals	(LKSN7)	101.61	97.00	97.0	+0.00	94.0	100.0	ND
Norman	(CWAN7)	98.77	97.15	95.0	+2.15	92.0	100.0	ND
Mountain Island	(MOUN7)	98.68	96.72	96.0	+0.72	94.3	100.0	ND
Wylie	(FOMS1)	99.04	97.95	97.0	+0.95	94.0	100.0	ND
Fishing Creek	(FCDS1)	99.39	98.28	98.0	+0.28	95.0	100.0	ND
Great Falls	(GTFS1)	99.48	97.95	97.5	+0.45	95.0	100.0	ND
Cedar Creek	(CDCS1)	100.31	97.88	97.5	+0.38	96.0	100.0	ND

NANTAHALA/LITTLE TENNESSEE/TUCKASEGEE SYSTEM

Tanasee Creek	(EFKN7)	97.33	95.11	85.0	+10.11	83.0	92.0	ND
Wolf Creek	(WCDN7)	97.29	95.06	85.0	+10.06	83.0	92.0	ND
Bear Creek	(BCDN7)	97.98	93.92	93.0	+0.92	91.0	98.0	ND
Cedar Cliff	(ICCN7)	98.81	97.94	98.0	-0.06	96.0	100.0	0
Glenville	(THPN7)	94.03	93.89	90.8	+3.09	87.3	94.0	ND
Nantahala	(NANN7)	94.28	94.26	86.9	+7.36	77.5	93.8	ND
Queens Creek	(QCDN7)	95.54	90.80	86.8	+4.00	85.8	91.9	ND
Fontana	(FONN7)	1672.31	1667.40	1653.5	+13.90	1646.0	1663.5	NA

SAVANNAH SYSTEM (As of 2/11, Total Reservoir Storage is 88% of Target for Jocassee and Keowee (Duke Energy) and 83% for Hartwell and Russell (USACE))

Jocassee	(JCSS1)	99.78	99.25	NA	NA	82.0	100.0	1
Keowee	(KEOS1)	99.20	98.77	NA	NA	95.0	100.0	1
Hartwell	(HRTG1)	657.11	656.83	658.34	-1.51	625.0	665.0	1
Russell	(RBDS1)	475.91	473.90	475.0	-1.10	470.0	480.0	1

PROJECTIONS...

LAKE HARTWELL February 2018 rainfall has brought the lake back to within normal elevations. The pool elevation is projected to remain

within 0 to -2 feet of guide curve or target elevations through April.

FONTANA LAKE Projected to remain above guide curve through the end of February, though the TVA is working to return the lake to guide curve by mid-March.

DEFINITIONS...

*AVG ELEV Reporting the daily average elevation factors in the fluctuations in pool elevation due to scheduled discharges and/or power generation.

MINIMUM ELEVATION The minimal elevation is the lowest elevation that the pool can be to minimally satisfy local community and river system needs. Drought release reduction plans may begin above the minimal elevation. For Lake Hartwell and Richard B. Russell Lake, the minimal elevation marks the bottom of conservation storage or the top of the inactive pool. Here, local community and river system needs can no longer be fully met at the Level 1 Drought Trigger Level. Drought release reduction plans begin at or above the minimal elevation, at 656.0 feet at Lake Hartwell and at 470.0 feet for Richard B. Russell Lake.

MAXIMUM ELEVATION The maximum elevation is the highest elevation that the pool can be to safely satisfy normal operating conditions. For Duke Energy reservoirs, 100.0 ft. is universally defined as full pool. At this level, water will reach the top of the spillway. Therefore, at higher levels, water will either spill over an ungated spillway or must be discharged by opening gates on a gated spillway. Minor flooding concerns increase around the lake above the maximum elevation, however, an exceedance above maximum elevation does not mean flooding is ongoing or likely. More significant reservoir flooding issues typically occur well above the maximum elevation, on the order of one or more feet.

ND No Drought
NA Not Applicable

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 LONG-TERM FLOOD OUTLOOK...
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Therefore, given current antecedent conditions and short- to long-range precipitation guidance, the latest long-term flood outlook through the end of April 2018 is as follows...

REGION	RUNOFF POTENTIAL	SMALL STREAMS FLOOD POTENTIAL	MAINSTEM RIVERS FLOOD POTENTIAL
NC Piedmont	Slightly Above Nrml	Near Normal	Near Normal
NC Foothills	Above Normal	Above Normal	Slightly Above Nrml
NC Nrn Mnts	Above Normal	Above Normal	NO MAINSTEMS
NC Cntl Mnts	Well-Above Nrml	Above Normal	Slightly Above Nrml
NC Srn Mnts	Well-Above Nrml	Above Normal	Slightly Above Nrml
SC Mnts	Above Normal	Slightly Above Nrml	NO MAINSTEMS
SC Foothills	Above Normal	Slightly Above Nrml	Near Normal
SC Piedmont	Near Normal	Near Normal	Slightly Below Nrml
GA NE Mnts/ Foothills	Above Normal	Slightly Above Nrml	Near Normal
GA Piedmont	Near Normal	Near Normal	Slightly Below Nrml

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 NEXT ISSUANCE DATE...
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The fifth and final Winter/Spring Flood Outlook should be issued around:
Friday, March 9th, 2018.

 ACKNOWLEDGMENTS...

The precipitation analysis is derived from quality-controlled gridded precipitation estimates produced at the Lower Mississippi River Forecast Center (LMRFC) and the Southeast River Forecast Center (SERFC).

The 1-10 day future precipitation is derived from guidance produced by NWS Greenville-Spartanburg.

The long-term precipitation outlooks are derived from guidance produced at the Climate Prediction Center (CPC).

Streamflow information is courtesy of the United States Geological Survey (USGS).

Reservoir information is courtesy of Duke Energy...Georgia Power... and the US Army Corps of Engineers (USACE).

The mainstem rivers flood outlook is produced in collaboration with the LMRFC and the SERFC.

 ADDITIONAL RESOURCES...

For the latest LEVELS of streams and mainstem rivers across the region please visit and bookmark:

http://water.weather.gov/ahps2/area.php?wfo=gsp&hydro_type=0&hsa_type=1

For the latest status of DROUGHT conditions across the region please visit and bookmark:

<http://droughtmonitor.unl.edu>

Please note the U.S. Drought Monitor is released every Thursday morning, but only factors in data through Tuesday morning. Any precipitation which may occur after Tuesday morning, but before Thursday morning, is considered in the following week's product.

 COUNTY TO REGION LEGEND...

 ..GEORGIA...

COUNTY	REGION
Elbert	GA Piedmont
Franklin	GA Piedmont
Habersham	GA NE Mountains/Foothills

Hart	GA Piedmont
Rabun	GA NE Mountains/Foothills
Stephens	GA NE Mountains/Foothills

 ..NORTH CAROLINA...

COUNTY	REGION (SUBREGION)
Alexander	NC Foothills (Northern)
Avery	NC Northern Mountains
Buncombe	NC Central Mountains
Burke	NC Foothills (Northern)
Cabarrus	NC Piedmont (Southern)
Caldwell	NC Foothills (Northern)
Catawba	NC Foothills (Northern)
Cleveland	NC Piedmont (Southern)
Davie	NC Piedmont (Northwest)
Gaston	NC Piedmont (Southern)
Graham	NC Central Mountains
Haywood	NC Central Mountains
Henderson	NC Southern Mountains
Iredell	NC Piedmont (Northwest)
Jackson North	NC Central Mountains
Jackson South	NC Southern Mountains
Lincoln	NC Piedmont (Southern)
Macon	NC Southern Mountains
Madison	NC Central Mountains
McDowell	NC Foothills (Northern)
Mecklenburg	NC Piedmont (Southern)
Mitchell	NC Northern Mountains
Polk	NC Foothills (Southern)
Rowan	NC Piedmont (Northwest)
Rutherford	NC Foothills (Southern)
Swain	NC Central Mountains
Transylvania	NC Southern Mountains
Union	NC Piedmont (Southern)
Yancey	NC Northern Mountains

 ..SOUTH CAROLINA...

COUNTY	REGION (SUBREGION)
Abbeville	SC Piedmont (Lower)
Anderson	SC Piedmont (Northern)
Cherokee	SC Piedmont (Northern)
Chester	SC Piedmont (Eastern)
Greenville	SC Mountains/Foothills
Greenwood	SC Piedmont (Lower)
Laurens	SC Piedmont (Lower)
Oconee	SC Mountains/Foothills
Pickens	SC Mountains/Foothills
Spartanburg	SC Mountains/Foothills
Union	SC Piedmont (Eastern)

York SC Piedmont (Eastern)

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 MAINSTEM RIVER LEGEND...
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REGION	RIVER	
NC Piedmont	Catawba	(Heavily Regulated)
	South Fork Catawba	(Slightly Regulated)
	Rocky	
NC Foothills	Yadkin	(Regulated)
	Broad	(Regulated)
	Catawba	(Regulated)
NC Nrn Mnts	NONE	
NC Cntl Mnts	French Broad	(Slightly Regulated)
	Little Tennessee	(Heavily Regulated)
	Nantahala	(Heavily Regulated)
	Oconaluftee	(Slightly Regulated)
	Pigeon	
NC Srn Mnts	Tuckasegee	(Heavily Regulated)
	French Broad	(Slightly Regulated)
	Little Tennessee	(Heavily Regulated)
	Nantahala	(Regulated)
	Tuckasegee	(Regulated)
SC Mnts	NO MAINSTEM RIVERS	
SC Foothills	Chatooga	
	Enoree	
	Pacolet	(Slightly Regulated)
	Reedy	(Slightly Regulated)
	Saluda	(Regulated)
	Savannah	(Heavily Regulated)
	Toxaway/Seneca	(Heavily Regulated)
SC Piedmont	Tyger	
	Broad	(Regulated)
	Pacolet	(Slightly Regulated)
	Reedy	(Slightly Regulated)
	Saluda	(Regulated)
GA NE Mnts/ Foothills	Savannah	(Heavily Regulated)
	Tyger	
GA Piedmont	Chatooga	
	Tallulah/Tugaloo	(Heavily Regulated)
	Broad	
	Savannah	(Heavily Regulated)

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 QUESTIONS or COMMENTS...
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This product has undergone several revisions and enhancements over the past couple of years. Additional enhancements are planned for future flood outlooks. Your feedback and recommendations are encouraged in order to ensure this product meets user needs. Please direct feedback, recommendations, questions, and comments to:

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JMP