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Status

Table 1: Gauge visits during the spring 2018 campaign. Comments: DD=gauge data download, MN=general gauge maintenance (cleaning, re-level), CA= rain gauge calibration, CV= vegetation clearing, and BR = data logger battery replacement.

Date	Gauges Visited	Technicians	Comments
3/16/2018	11; 3	Doug	DD, MN, CV, CA
3/28/2018	106, 10	Doug	DD, MN, CV, CA
3/31/2018	111, 112	Doug, Jackie	DD, MN, CV, CA
4/4/2018	107, 109	Doug	DD, MN, CV, CA
4/11/2018	104, 110, 4	Doug	DD, MN, CV, CA
4/14/2018	305, 309, 310	Doug, Tyler, Samuel	DD, MN, CV, CA
4/18/2018	108;	Doug	DD, MN, CV, CA
4/21/2018	303s, 306	Doug, Rachel, Jackie	DD, MN, CV, CA
4/25/2018	304, 307	Doug, Chris, Caitlyn	DD, MN, CV, CA
4/30/2018	301, 302	Doug, Chris	DD, MN, CV, CA
5/4/2018	100T, 105, 311	Doug, Zachary T	DD, MN, CV, CA
5/7/2018	101, 102, 103	Doug, Carly	DD, MN, CV, CA
5/9/2018	300, 308	Doug, Samuel	DD, MN, CV, CA
5/25/2018	2; 5; 8	Doug, Mitch, Don	DD, MN, CV, CA

Gauge visitation in support of the Duke Great Smoky Mountain Rain Gauge Network (GSMRGN) during the spring 2018 occurred over 14 days spanning a period of eleven weeks from March – May 2018. The primary purpose of the visits in the spring 2018 was [1] to perform downloads of gauge tip observations since the previous gauge visits in the autumn 2017, [2] to complete rain gauge and data logger maintenance tasks, [3] to clear vegetation and tree limbs and, [4] to calibrate ALL rain gauges since field calibrations were last completed in the autumn 2016. Ten technicians and volunteers (listed on the front page) made the visits and performed the required work. It is important to note that the volunteers were NOT directly involved in any critical gauge visit tasks, but were volunteering primarily to assist with personal safety should someone get injured during a particular series of gauge visits.

The general tasks completed at **every** gauge visit consist of (1) gauge data download from the data loggers [DD in Table 1], (2) general gauge maintenance and ML1 logger condition monitoring [MN in Table 1], (3) clear vegetation within a five foot radius of the rain gauge [CV in Table 1], and, (4) calibration of rain gauges using a single trial of the 50, 100, and 300 mm nozzles [CA in Table 1]. Specialized tasks were the (rare) required battery replacement (as indicated using a multimeter to test logger battery voltage after a long winter), and a visit at g107 to check that the drain ports had not clogged (as they had in the summer 2017) in anticipation of the arrival of Tropical Depression Alberto on 28 May 2018. Task (1) merely required a serial port link between the field study laptop and the gauge data logger and consisted of pulling the data (often in files having raw [*].txt] and CSV formats) onto a desktop folder on the laptop, checking for completeness of the data, and comparing the data logger time and date to the actual GPS time and date (making a screen capture of the time comparison). The standard that has been chosen for this study is to maintain the clocks on Eastern Daylight

Time, since most of the “warm” precipitation will be occurring during the season when EDT is in effect. Most ML1-FL data logger times have been adjusted (using “TA” command) during previous gauge visits to coincide with the EDT given by the GPS locator. The ML1 logger at g104 showed substantial improvement in keeping time over the winter 2017-2018. However, the ML1 logger at g110 continued to show a poor response using the TA command and will require replacement during the summer 2018 visit if improvement isn’t noted. The ML1 logger at g106 showed no registration of three test bucket tips during testing. Logger wires were changed from switch #1 to switch #2 (similar to a problem found at g #109 in 2016). Unfortunately, it is unknown when, during the winter season, this switching problem became significant such that g106 failed to register bucket tips forced by rainfall. The lithium battery voltage of the ML1-420 logger at g302 (which had been replaced during the autumn 2017 visit) was found to have dropped to **0.68V** during the spring 2018 visit. Comparing the g302 rain record to that of nearby g301, the low-voltage logger was able to detect all precipitation events through 15 April 2018. Another data logger will have to be installed at g302 if the logger battery voltage shows a significant drop between spring and autumn 2018. Task (2) required the cleaning of debris from the funnel filter, cleaning the tipping buckets of debris (if necessary), cleaning the gauge drain ports and siphon, re-leveling the gauge if it has come unlevelled, and fixing or replacing the gauge mesh if it had been damaged. Related to another defect at g110, the funnel threads appear to be compromised such that the rubber siphon attachment cannot easily (hand) screw into the funnel. The g110 funnel may also have to be replaced during the summer 2018 visit. Liquid wrench is needed at g108 in the summer 2018 visit as the nut in one of the bolt ports has become rusty and is in need of replacement. Task (3) consisted of cutting briars and other emerging vegetation during the spring season within a five foot radius of the gauge using clippers or weeding by hand. One location (g305) will need tree limbs cleared using an extension saw during the autumn 2018 visit. Task (4) was completed successfully in every data logger at each of the rain gauge locations. The lithium battery voltage of the ML1-420 and ML1-FL loggers was good (greater than 3.50 Volts) at all but three (g010, g300, g302) of the gauge locations upon arrival during the spring months.

Challenges encountered during some of the gauge visits in the spring 2018 were; (i) icy conditions early in the campaign [resulting in gauge visit postponements and scheduling challenges due to the return of winter in March and April after a warm February] and (ii) the severe time drift at g110 which was seemingly unresponsive to the ‘TA’ command. Otherwise, the gauge network was functioning as smoothly as is possible. It should be noted that a new Davis Pro weather station has been installed near the Mount Sterling fire tower (which is now locked, but we have a functioning key!), next to g310. The owner of the weather station (and data) at Duke Power is being pursued so the observations can be used to help diagnose the phase of falling precipitation during the cool season.

Details of every gauge visit along with precipitation raw and CSV files (and some internal temperature and battery voltage files) can be found via Google Drive <https://drive.google.com/open?id=1MndFmDJmulAGLM074ZsSCIkACujKhCEK> which contains sub-folders for each gauge that consist of the individual data files (often having at least two different formats), pictures taken at the gauge site during the visit, screenshots of the GPS (laptop) and ML1 logger time comparison, and a MS Word document that mirrors the notes made in the field journal during each visit.

Noteworthy precipitation events of November 2017 – February 2018 as observed at KAVL are highlighted in yellow in **Appendix A**.

Table 2: Planned gauge visits during the summer 2018 campaign. DD=gauge data download, MN=general gauge maintenance (e.g., cleaning, re-level), CA= rain gauge calibration, CV= vegetation clearing, and BR = data logger battery replacement.

Date	Gauges Visited	Technicians	Comments
6/??/2018	3; 11; 107; 109	Doug + 1 field technician	DD, MN, CV
7/??/2018	2; 5; 8; 106; 10	Doug + 1 field technician	DD, MN, CV
7/??/2018	4; 104, 110, 105	Doug + 1 field technician	DD, MN, CV
7/??/2018	108;	Doug + 1 field technician	DD, MN, CV
7/??/2018	111, 112, 311	Doug + 1 field technician	DD, MN, CV
7/??/2018	101, 102, 103, 100T	Doug + 1 field technician	DD, MN, CV
7/??/2018	303s, 306, 308	Doug + 2 field technicians	DD, MN, CV
7/??/2018	304, 307, 305, 309, 310	Doug + 2 field technicians	DD, MN, CV
7/??/2018	301, 302, 300	Doug + 2 field technicians	DD, MN, CV

Gauge visitation in support of the Duke GSMRGN during the summer 2018 will occur over at least nine days spanning late June through July 2018. The primary purpose of the visits will be to download precipitation observations that were made since the previous gauge visits in March - May 2018 [DD in Table 2], perform maintenance and check if the ML1 logger times have drifted between visits and make the corresponding needed adjustments [MN in Table 2], and clear vegetation (and tree branches) from overhanging gauges [CV in Table 2]. Gauge parts and loggers may have to be replaced during some of the visits if less-than-acceptable conditions show no signs of improvement, as noted in the previous section description.

Details of every gauge visit along with each gauge precipitation record will be posted online and shall contain sub-folders for each gauge that consist of the individual data files (often having at least two different formats), pictures taken at the gauge site during the visit, screenshots of the GPS (laptop) and ML1 logger time comparison, and a MS Word document that mirrors the notes made in the field journal during the visit.

The current technician roster during the 2018-2019 academic year consists of Tyler Moore, Carly Narotsky, Zachary Tuggle. New undergraduate research students at UNC Asheville will be recruited as field technicians for the Duke GSMRGN project in the fall 2019 as Rachel Dunn, Jackie Hoyle, and Samuel O'Donnell have recently graduated from UNC Asheville.

Table 3: The Duke Great Smoky Mountain Rain Gauge Network is currently (valid as of 30 May 2018) composed of 32 tipping bucket rain gauges.

Gauge #	Location	Latitude	Longitude	Altitude
RG002	Lickstone Bald	35°25.5' N	82°58.2' W	5680 ft.
RG003	High Top	35°23.0' N	82°54.9' W	5280 ft.
RG004	Lickstone Ridge S	35°22.0' N	82°59.4' W	6305 ft.
RG005	Deep Gap	35°24.5' N	82°57.8' W	4986 ft.
RG008	Double Summer Gap	35°22.9' N	82°58.4' W	5700 ft.
RG010	Beaty Summer Gap	35°27.3' N	82°56.8' W	4849 ft.
RG011	near Deep Gap	35°23.7' N	82°54.9' W	4081 ft.
RG100T	Purchase Knob	35°35.1' N	83°04.3' W	4905 ft.
RG101	The Swag	35°34.5' N	83°05.2' W	4986 ft.
RG102	Hemphill Bald	35°33.8' N	83°06.2' W	5365 ft.
RG103	JR Property	35°33.2' N	83°07.0' W	5539 ft.
RG104	Cat. Ski Area	35°33.2' N	83°05.2' W	5208 ft.
RG105	KH Property	35°38.0' N	83°02.4' W	4412 ft
RG106	Pinnacle Ridge	35°25.9' N	83°01.7' W	3969 ft
RG107	Lookout Point	35°34.0' N	82°54.4' W	4459 ft
RG108	Utah Mountain	35°33.2' N	82°59.3' W	4188 ft
RG109	Eaglesnest Ridge	35°29.7' N	83°02.4' W	4922 ft
RG110	JH Property	35°32.8' N	83°08.8' W	5128 ft
RG111	Hurricane Ridge	35°43.7' N	82°56.8' W	4573 ft
RG112	Ore Knob	35°45.0' N	82°57.8' W	3884 ft
RG300	Camel Hump Knob	35°43.5' N	83°13.0'W	5110 ft
RG301	Mt Guyot	35°42.3'N	83°15.3'W	6570 ft
RG302	Snake Den Ridge	35°43.2'N	83°14.8'W	6104 ft
RG303s	Mt Cammerer	35°45.7'N	83°09.7'W	4887 ft
RG304	Big Cataloochee	35°40.2'N	83°10.9'W	5971 ft

RG305	Mt Sterling 1	35°41.4'N	83°07.9'W	5349 ft
RG306	Sunup Knob	35°44.7'N	83°10.2'W	5039 ft
RG307	Balsam Mountain	35°39.0'N	83°11.9'W	5327 ft
RG308	Cosby Knob	35°43.8' N	83°10.9'W	4826 ft
RG309	Mt Sterling 2	35°40.9'N	83°09.0'W	5262 ft
RG310	Mt Sterling 3	35°42.1'N	83°07.3'W	5761 ft
RG311	Big Creek	35°45.9'N	83°08.4'W	3398 ft

Appendix A

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.

WFO Monthly/Daily Climate Data

000
CXUS52 KGSP 020034
CF6AVL

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: ASHEVILLE NC
MONTH: NOVEMBER
YEAR: 2017
LATITUDE: 35 25 N
LONGITUDE: 82 33 W

TEMPERATURE IN F:					:PCPN:		SNOW:		WIND			:SUNSHINE:		SKY		:PK WND		
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	68	40	54	2	11	0	0.00	0.0	0	4.4	18	180	M	M	2		26	200
2	73	51	62	11	3	0	0.00	0.0	0	5.5	18	200	M	M	4		24	210
3	76	47	62	11	3	0	0.15	0.0	0	2.0	12	310	M	M	6	13	14	320
4	67	59	63	12	2	0	0.15	0.0	0	4.4	10	170	M	M	8	1	12	160
5	72	56	64	14	1	0	0.06	0.0	0	6.6	15	150	M	M	7	1	20	150
6	70	56	63	13	2	0	0.00	0.0	0	2.9	12	200	M	M	5		17	190
7	66	55	61	11	4	0	1.02	0.0	0	3.2	13	330	M	M	5	13	15	330
8	59	46	53	3	12	0	0.04	0.0	0	5.2	13	340	M	M	9	1	15	350
9	58	45	52	3	13	0	0.02	0.0	0	8.4	17	350	M	M	8		24	340
10	56	35	46	-3	19	0	0.00	0.0	0	11.1	23	340	M	M	0		30	350
11	50	31	41	-8	24	0	0.00	0.0	0	6.6	13	170	M	M	2		19	140

12	49	39	44	-4	21	0	0.01	0.0	0	2.4	10	160	M	M	10	18	14	160
13	55	37	46	-2	19	0	0.00	0.0	0	9.2	21	340	M	M	3	1	30	340
14	54	33	44	-4	21	0	0.00	0.0	0	2.5	10	170	M	M	5	1	14	150
15	54	42	48	0	17	0	0.00	0.0	0	2.9	10	160	M	M	6		13	140
16	61	43	52	5	13	0	0.00	0.0	0	9.4	23	340	M	M	2		27	340
17	64	31	48	1	17	0	0.00	0.0	0	4.4	12	180	M	M	0		16	190
18	59	41	50	4	15	0	0.13	0.0	0	11.7	23	180	M	M	5	1	31	160
19	61	34	48	2	17	0	0.01	0.0	0	17.7	32	340	M	M	2	1	42	340
20	55	29	42	-4	23	0	0.00	0.0	0	6.7	15	340	M	M	0		21	350
21	59	32	46	0	19	0	T	0.0	0	4.2	16	210	M	M	5		20	190
22	56	37	47	2	18	0	0.00	0.0	0	10.0	28	350	M	M	1	12	35	340
23	56	28	42	-3	23	0	0.00	0.0	0	1.7	9	180	M	M	0		13	170
24	62	27	45	0	20	0	0.00	0.0	0	2.2	12	140	M	M	0	12	16	140
25	60	30	45	1	20	0	0.00	0.0	0	5.9	22	340	M	M	1		30	340
26	55	38	47	3	18	0	0.00	0.0	0	12.1	23	340	M	M	0		35	340
27	62	30	46	2	19	0	0.00	0.0	0	3.5	12	340	M	M	0		14	350
28	62	26	44	0	21	0	0.00	0.0	0	3.0	13	140	M	M	0		16	140
29	67	29	48	5	17	0	0.00	0.0	0	3.5	14	330	M	M	0		19	340
30	64	31	48	5	17	0	T	0.0	0	2.1	9	350	M	M	4		12	130

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=====
SM 1830 1158          449  0  1.59      0.0 175.4          M      100
=====
AV 61.0 38.6          5.8 FASTST  M      M      3      MAX(MPH)
                        MISC ----> # 32 340          # 42 340
=====

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NOTES:
LAST OF SEVERAL OCCURRENCES
COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: ASHEVILLE NC
MONTH: NOVEMBER
YEAR: 2018
LATITUDE: 35 25 N
LONGITUDE: 82 33 W

[TEMPERATURE DATA]	[PRECIPITATION DATA]	SYMBOLS USED IN COLUMN 16
AVERAGE MONTHLY: 49.8	TOTAL FOR MONTH: 1.59	1 = FOG OR MIST
DPTR FM NORMAL: 2.5	DPTR FM NORMAL: -2.06	2 = FOG REDUCING VISIBILITY
HIGHEST: 76 ON 3	GRST 24HR 1.03 ON 7- 8	TO 1/4 MILE OR LESS
LOWEST: 26 ON 28		3 = THUNDER
	SNOW, ICE PELLETS, HAIL	4 = ICE PELLETS
	TOTAL MONTH: 0.0 INCH	5 = HAIL
	GRST 24HR 0.0	6 = FREEZING RAIN OR DRIZZLE
	GRST DEPTH: 0	7 = DUSTSTORM OR SANDSTORM:
		VSBY 1/2 MILE OR LESS
		8 = SMOKE OR HAZE
[NO. OF DAYS WITH]	[WEATHER - DAYS WITH]	9 = BLOWING SNOW
MAX 32 OR BELOW: 0	0.01 INCH OR MORE: 9	X = TORNADO
MAX 90 OR ABOVE: 0	0.10 INCH OR MORE: 4	
MIN 32 OR BELOW: 11	0.50 INCH OR MORE: 1	

MIN 0 OR BELOW: 0 1.00 INCH OR MORE: 1

[HDD (BASE 65)]

TOTAL THIS MO. 449 CLEAR (SCALE 0-3) 16
DPTR FM NORMAL -83 PTCLDY (SCALE 4-7) 12
TOTAL FM JUL 1 718 CLOUDY (SCALE 8-10) 2
DPTR FM NORMAL -149

[CDD (BASE 65)]

TOTAL THIS MO. 0
DPTR FM NORMAL -1 [PRESSURE DATA]
TOTAL FM JAN 1 1042 HIGHEST SLP 30.51 ON 11
DPTR FM NORMAL 179 LOWEST SLP 29.54 ON 18

[REMARKS]

#FINAL-11-17#

WFO Monthly/Daily Climate Data

000
CXUS52 KGSP 010821
CF6AVL

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: ASHEVILLE NC
MONTH: DECEMBER
YEAR: 2017
LATITUDE: 35 25 N
LONGITUDE: 82 33 W

Table with columns: TEMPERATURE IN F, PCPN, SNOW, WIND, SUNSHINE, SKY, PK WND. Rows 1-17 showing daily climate data.

18	60	31	46	7	19	0	0.00	0.0	0	5.4	20	340	M	M	3	23	330
19	67	37	52	13	13	0	0.00	0.0	0	5.8	16	350	M	M	2	20	350
20	55	44	50	12	15	0	0.80	0.0	0	4.6	13	340	M	M	9 1	19	350
21	53	44	49	11	16	0	0.00	0.0	0	5.2	14	180	M	M	10	17	150
22	62	45	54	16	11	0	0.03	0.0	0	5.3	14	180	M	M	8 1	17	190
23	61	44	53	15	12	0	0.12	0.0	0	12.7	25	330	M	M	6 1	36	330
24	51	39	45	7	20	0	0.00	0.0	0	7.3	25	340	M	M	6	33	320
25	39	23	31	-7	34	0	T	0.0	0	14.7	30	340	M	M	1 4	37	330
26	47	25	36	-2	29	0	0.00	0.0	0	5.4	16	340	M	M	5	22	340
27	39	24	32	-6	33	0	0.00	0.0	0	9.9	23	340	M	M	2	28	340
28	36	20	28	-9	37	0	0.00	0.0	0	5.4	14	170	M	M	0	17	170
29	46	20	33	-4	32	0	0.00	0.0	0	6.4	18	340	M	M	1	24	330
30	41	29	35	-2	30	0	0.00	0.0	0	13.9	28	340	M	M	0	35	340
31	30	19	25	-12	40	0	T	T	0	8.4	18	350	M	M	9 168	28	340

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=====
SM 1525 973          758 0 2.47      8.7 231.4          M          120
=====
AV 49.2 31.4          7.5 FASTST  M    M    4    MAX (MPH)
                        MISC ----> # 31 330          # 41 330
=====

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NOTES:
LAST OF SEVERAL OCCURRENCES
COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: ASHEVILLE NC
MONTH: DECEMBER
YEAR: 2018
LATITUDE: 35 25 N
LONGITUDE: 82 33 W

[TEMPERATURE DATA]	[PRECIPITATION DATA]	SYMBOLS USED IN COLUMN 16
AVERAGE MONTHLY: 40.3	TOTAL FOR MONTH: 2.47	1 = FOG OR MIST
DPTR FM NORMAL: 0.9	DPTR FM NORMAL: -1.12	2 = FOG REDUCING VISIBILITY
HIGHEST: 67 ON 19	GRTST 24HR 0.93 ON 8- 9	TO 1/4 MILE OR LESS
LOWEST: 19 ON 31		3 = THUNDER
	SNOW, ICE PELLETS, HAIL	4 = ICE PELLETS
	TOTAL MONTH: 8.7 INCHES	5 = HAIL
	GRTST 24HR 8.5 ON 8- 9	6 = FREEZING RAIN OR DRIZZLE
	GRTST DEPTH: 8 ON 9	7 = DUSTSTORM OR SANDSTORM:
		VSBY 1/2 MILE OR LESS
		8 = SMOKE OR HAZE
[NO. OF DAYS WITH]	[WEATHER - DAYS WITH]	9 = BLOWING SNOW
MAX 32 OR BELOW: 1	0.01 INCH OR MORE: 6	X = TORNADO
MAX 90 OR ABOVE: 0	0.10 INCH OR MORE: 5	
MIN 32 OR BELOW: 20	0.50 INCH OR MORE: 3	
MIN 0 OR BELOW: 0	1.00 INCH OR MORE: 0	
[HDD (BASE 65)]		
TOTAL THIS MO. 758	CLEAR (SCALE 0-3) 17	
DPTR FM NORMAL -36	PTCLDY (SCALE 4-7) 8	

TOTAL FM JUL 1 1476 CLOUDY (SCALE 8-10) 6
 DPTR FM NORMAL -185

[CDD (BASE 65)]

TOTAL THIS MO. 0
 DPTR FM NORMAL 0 [PRESSURE DATA]
 TOTAL FM JAN 1 1042 HIGHEST SLP 30.50 ON 28
 DPTR FM NORMAL 179 LOWEST SLP 29.68 ON 14

[REMARKS]

#FINAL-12-17#

WFO Monthly/Daily Climate Data

858
 CXUS52 KGSP 010836
 CF6AVL

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: ASHEVILLE NC
 MONTH: JANUARY
 YEAR: 2018
 LATITUDE: 35 25 N
 LONGITUDE: 82 33 W

TEMPERATURE IN F:					:PCPN:			SNOW:		WIND			:SUNSHINE:			SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18	
										12Z		AVG		MX		2MIN			
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR	
1	21	12	17	-20	48	0	T	T	0	15.1	23	330	M	M	3		30	320	
2	33	8	21	-16	44	0	0.00	0.0	0	7.2	28	330	M	M	0		33	330	
3	36	13	25	-12	40	0	0.00	0.0	0	5.4	17	340	M	M	3		21	340	
4	24	13	19	-18	46	0	T	T	0	20.0	32	340	M	M	2		43	330	
5	26	11	19	-18	46	0	0.00	0.0	0	11.3	18	340	M	M	3		29	340	
6	27	10	19	-18	46	0	0.00	0.0	0	10.9	18	340	M	M	0		23	330	
7	32	6	19	-18	46	0	0.00	0.0	0	4.9	10	140	M	M	0		14	150	
8	47	23	35	-2	30	0	T	0.0	0	7.2	16	170	M	M	9	1	22	180	
9	62	29	46	9	19	0	0.00	0.0	0	4.0	12	340	M	M	6	12	14	340	
10	53	38	46	9	19	0	T	0.0	0	4.0	13	160	M	M	10	1	16	160	
11	58	44	51	14	14	0	1.71	0.0	0	7.2	12	150	M	M	10	1	17	180	
12	61	33	47	10	18	0	0.69	0.0	0	9.0	32	340	M	M	9	1	43	330	
13	33	18	26	-11	39	0	0.00	0.0	0	21.6	36	340	M	M	6		44	340	
14	33	15	24	-13	41	0	0.00	0.0	0	7.8	20	340	M	M	0		27	340	
15	40	18	29	-8	36	0	0.00	0.0	0	4.4	10	150	M	M	1		14	160	
16	47	20	34	-3	31	0	T	0.1	0	7.1	26	340	M	M	3	1	35	340	
17	24	10	17	-20	48	0	0.08	2.0	1	19.8	38	340	M	M	7	19	43	340	
18	36	9	23	-14	42	0	0.00	0.0	1	16.6	28	340	M	M	0		39	340	
19	51	23	37	0	28	0	0.00	0.0	1	7.0	24	330	M	M	0		29	340	
20	59	24	42	5	23	0	0.00	0.0	T	8.1	22	350	M	M	0		31	340	
21	64	28	46	9	19	0	0.00	0.0	0	1.1	8	170	M	M	3	1	10	170	
22	58	33	46	9	19	0	0.75	0.0	0	3.6	16	170	M	M	5	1	20	170	

23	56	38	47	10	18	0	0.05	0.0	0	13.3	25	330	M	M	2	1	33	330
24	45	31	38	1	27	0	0.00	0.0	0	12.1	28	330	M	M	0		35	330
25	50	29	40	3	25	0	0.00	0.0	0	8.3	18	340	M	M	0		25	320
26	53	24	39	2	26	0	0.00	0.0	0	4.2	15	160	M	M	1		19	170
27	50	38	44	6	21	0	0.24	0.0	0	2.4	8	170	M	M	10	1	11	110
28	54	46	50	12	15	0	0.45	0.0	0	3.9	14	340	M	M	9	1	18	350
29	49	33	41	3	24	0	0.07	T	0	12.3	29	340	M	M	4	1	36	330
30	35	23	29	-9	36	0	T	T	T	15.7	32	340	M	M	4	1	40	340
31	49	19	34	-4	31	0	0.00	0.0	0	6.2	16	190	M	M	0		20	180

```

=====
SM 1366 719          965 0 4.04      2.1 281.7          M      110
=====
AV 44.1 23.2          9.1 FASTST  M      M      4      MAX (MPH)
MISC ----> # 38 340          # 44 340
=====

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NOTES:
LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: ASHEVILLE NC
MONTH: JANUARY
YEAR: 2018
LATITUDE: 35 25 N
LONGITUDE: 82 33 W

[TEMPERATURE DATA]	[PRECIPITATION DATA]	SYMBOLS USED IN COLUMN 16
AVERAGE MONTHLY: 33.6	TOTAL FOR MONTH: 4.04	1 = FOG OR MIST
DPTR FM NORMAL: -3.5	DPTR FM NORMAL: 0.37	2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
HIGHEST: 64 ON 21	GRTST 24HR 1.71 ON 11-11	3 = THUNDER
LOWEST: 6 ON 7	SNOW, ICE PELLETS, HAIL	4 = ICE PELLETS
	TOTAL MONTH: 2.1 INCHES	5 = HAIL
	GRTST 24HR 2.1 ON 16-17	6 = FREEZING RAIN OR DRIZZLE
	GRTST DEPTH: 1 ON 19,18	7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS
		8 = SMOKE OR HAZE
[NO. OF DAYS WITH]	[WEATHER - DAYS WITH]	9 = BLOWING SNOW
MAX 32 OR BELOW: 6	0.01 INCH OR MORE: 8	X = TORNADO
MAX 90 OR ABOVE: 0	0.10 INCH OR MORE: 5	
MIN 32 OR BELOW: 23	0.50 INCH OR MORE: 3	
MIN 0 OR BELOW: 0	1.00 INCH OR MORE: 1	

[HDD (BASE 65)]	
TOTAL THIS MO. 965	CLEAR (SCALE 0-3) 16
DPTR FM NORMAL 99	PTCLDY (SCALE 4-7) 9
TOTAL FM JUL 1 2441	CLOUDY (SCALE 8-10) 6
DPTR FM NORMAL -86	

[CDD (BASE 65)]
TOTAL THIS MO. 0

DPTR FM NORMAL 0 [PRESSURE DATA]
 TOTAL FM JAN 1 0 HIGHEST SLP 30.66 ON 26
 DPTR FM NORMAL 0 LOWEST SLP 29.53 ON 12

[REMARKS]

#FINAL-01-18#

WFO Monthly/Daily Climate Data

000
 CXUS52 KGSP 010818
 CF6AVL

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: ASHEVILLE NC
 MONTH: FEBRUARY
 YEAR: 2018
 LATITUDE: 35 25 N
 LONGITUDE: 82 33 W

TEMPERATURE IN F:					:PCPN:			SNOW:	WIND			:SUNSHINE:			SKY	:PK WND		
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
								12Z	AVG MX		2MIN							
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	60	27	44	6	21	0	0.08	0.0	0	7.7	25	350	M	M	4	1	36	360
2	36	20	28	-10	37	0	0.01	T	0	13.7	26	340	M	M	1		35	350
3	40	19	30	-8	35	0	0.00	0.0	0	7.3	14	120	M	M	1		19	140
4	45	29	37	-1	28	0	0.88	T	0	7.0	22	340	M	M	9	16	27	330
5	47	29	38	-1	27	0	0.00	0.0	0	11.1	26	340	M	M	3		35	330
6	54	29	42	3	23	0	0.01	0.0	0	4.5	13	340	M	M	7		16	340
7	61	36	49	10	16	0	1.20	0.0	0	9.3	29	340	M	M	9	1	34	340
8	52	30	41	2	24	0	0.00	0.0	0	10.4	25	340	M	M	2		31	340
9	57	26	42	3	23	0	0.00	0.0	0	4.1	17	180	M	M	1		22	160
10	57	44	51	12	14	0	1.21	0.0	0	4.0	13	170	M	M	10	1	16	140
11	64	57	61	21	4	0	1.02	0.0	0	10.0	29	200	M	M	9	1	40	200
12	58	46	52	12	13	0	0.14	0.0	0	8.8	22	330	M	M	9	1	28	350
13	49	39	44	4	21	0	0.05	0.0	0	6.6	14	170	M	M	10	1	20	130
14	63	39	51	11	14	0	T	0.0	0	5.4	13	180	M	M	7	12	16	180
15	79	49	64	24	1	0	T	0.0	0	7.1	22	210	M	M	2	1	29	210
16	77	46	62	22	3	0	T	0.0	0	10.4	30	330	M	M	6		39	330
17	50	44	47	6	18	0	0.11	0.0	0	8.1	21	340	M	M	9	1	27	340
18	62	42	52	11	13	0	T	0.0	0	9.2	22	340	M	M	2		32	340
19	59	47	53	12	12	0	0.01	0.0	0	5.0	10	140	M	M	10	1	15	140
20	70	54	62	21	3	0	T	0.0	0	6.8	18	190	M	M	9	1	24	190
21	72	60	66	24	0	1	0.12	0.0	0	6.0	22	190	M	M	7	1	29	190
22	77	58	68	26	0	3	T	0.0	0	9.8	18	190	M	M	2		24	180
23	74	50	62	20	3	0	0.00	0.0	0	5.4	17	180	M	M	3	12	23	180
24	75	54	65	23	0	0	0.02	0.0	0	9.0	25	200	M	M	6	1	34	200
25	67	51	59	17	6	0	0.26	0.0	0	8.4	17	180	M	M	9	1	26	190
26	61	40	51	8	14	0	0.05	0.0	0	7.4	30	340	M	M	7		39	340

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27 59 30 45 2 20 0 0.00 0.0 0 4.2 15 170 M M 2 12 19 180
28 52 45 49 6 16 0 0.40 0.0 0 4.9 16 170 M M 8 1 21 160
=====
SM 1677 1140 409 4 5.57 T 211.6 M 164
=====
AV 59.9 40.7 7.6 FASTST M M 6 MAX(MPH)
MISC ----> # 30 330 # 40 200
=====

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NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: ASHEVILLE NC
MONTH: FEBRUARY
YEAR: 2018
LATITUDE: 35 25 N
LONGITUDE: 82 33 W

[TEMPERATURE DATA]	[PRECIPITATION DATA]	SYMBOLS USED IN COLUMN 16
AVERAGE MONTHLY: 50.3	TOTAL FOR MONTH: 5.57	1 = FOG OR MIST
DPTR FM NORMAL: 10.0	DPTR FM NORMAL: 1.81	2 = FOG REDUCING VISIBILITY
HIGHEST: 79 ON 15	GRTST 24HR 1.97 ON 10-11	TO 1/4 MILE OR LESS
LOWEST: 19 ON 3		3 = THUNDER
	SNOW, ICE PELLETS, HAIL	4 = ICE PELLETS
	TOTAL MONTH: T	5 = HAIL
	GRTST 24HR T ON 2, 4	6 = FREEZING RAIN OR DRIZZLE
	GRTST DEPTH: 0	7 = DUSTSTORM OR SANDSTORM:
		VSBY 1/2 MILE OR LESS
		8 = SMOKE OR HAZE
[NO. OF DAYS WITH]	[WEATHER - DAYS WITH]	9 = BLOWING SNOW
		X = TORNADO
MAX 32 OR BELOW: 0	0.01 INCH OR MORE: 16	
MAX 90 OR ABOVE: 0	0.10 INCH OR MORE: 9	
MIN 32 OR BELOW: 9	0.50 INCH OR MORE: 4	
MIN 0 OR BELOW: 0	1.00 INCH OR MORE: 3	
[HDD (BASE 65)]		
TOTAL THIS MO. 409	CLEAR (SCALE 0-3) 9	
DPTR FM NORMAL -281	PTCLDY (SCALE 4-7) 9	
TOTAL FM JUL 1 2850	CLOUDY (SCALE 8-10) 10	
DPTR FM NORMAL -367		
[CDD (BASE 65)]		
TOTAL THIS MO. 4		
DPTR FM NORMAL 4	[PRESSURE DATA]	
TOTAL FM JAN 1 4	HIGHEST SLP 30.66 ON 13	
DPTR FM NORMAL 4	LOWEST SLP 29.80 ON 4	

[REMARKS]

#FINAL-02-18#