Prepared by:
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Don Elliott (Waynesville Watershed Field Manager)

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Status

Table 1: Gauge visits during the summer 2021 campaign. Comments: DD=gauge data download, MN=general gauge maintenance (cleaning, re-level), CA= rain gauge calibration, CV= vegetation clearing, ECC=electric contact cleaning treatment, and BR = data logger battery replacement.

Date	Gauges Visited	Technicians	Comments	Vehicle
7/1/2021	10*A; 107; 109; 104; 110*B	Doug, Sarah, Kyle	DD, MN, CV, ECC	Minivan
7/2/2021	100T, 111, 112, 311	Doug, Fairchild	DD, MN, CV, ECC	Minivan
7/5/2021	3; 11; 106; 4*C	Doug	DD, MN, CV, ECC	Journey
7/9/2021	305, 309, 310	Doug, Meredith, Nathan, Kyle	DD, MN, CV, ECC	Journey
7/13/2021	101, 102, 103, 105, 108	Doug, Paige, Nathan, Kyle	DD, MN, CV, ECC	Journey
7/16/2021	303s, 306, 308	Doug, Fairchild	DD, MN, CV, ECC	Journey
7/19/2021	304, 307	Doug, Nathan	DD, MN, CV, ECC	Journey
7/23/2021	301, 302, 300	Doug, Sarah, Nathan	DD, MN, CV, ECC	Journey
8/6/2021	2; 5; 8;	Doug	DD, MN, CV, ECC	NOTHING AVAILABLE

*A => stainless steel nut, *B => extension saw, *C => erosion; install more posts

Gauge visitation in support of the Duke Great Smoky Mountain Rain Gauge Network (GSMRGN) during the summer 2021 campaign occurred over nine days spanning a period of five weeks in July - August 2021. The primary purpose of the visits in the summer 2021 was [1] to perform downloads of gauge tip observations since the previous gauge visits in the spring 2021, [2] to complete rain gauge and data logger maintenance tasks, [3] to clear vegetation and tree limbs and, [4] to clean the electronic contact between the data logger lead wires and the tipping bucket (rain gauge) switch using a chemical solvent from a spray can. Seven 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) electrical contact cleaning [ECC in Table 1]. 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 screenshot 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. 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 unleveled, and fixing or replacing the gauge mesh if it had been damaged. Task (3) consisted of cutting briars and other growing vegetation during the summer season within a five foot radius of the gauge using clippers or weeding by hand. Task (4) was completed successfully at most of the rain gauge locations. The ECC treatment at g #304 will be completed during the autumn 2021 visit. It was not completed in the summer 2021 due to the extra time required for the pivot bolt repairs and the proximity of dangerous thunderstorms on 19 July 2021. Specialized

tasks were (a) the replacement of a gauge cover stainless steel nut at g #010 for a bolt whose threads on the gauge base have become stripped (b) the return of g #110 to an upright position [it had been pushed over again by a bear on 27 April 2021{also happened on 16 November 2020}], (c) the replacement of four "C" batteries in the motion-activated video cameras at g #309 and #302, (d) the removal of three mice and their nest in g #005, and (e) the improvisation of a pivot bolt at g #304 to replace the bolt that had snapped between the previous visit on 15 May 2021 and 19 July 2021. Of note is that the data logger voltage on every rain gauge was satisfactory so no lithium batteries required replacement.

The primary challenge continues to be the poor performance of the ML1 software 'TA' setting in some of the older loggers, which seems to have a poor time adjustment algorithm, forcing TA to be shut "off" until the next gauge visit (g #107, #106, #307, #005). The other challenge is the premature battery voltage drainage in the newer ML1-420 loggers. Fortunately, no data loggers were found to have run the battery completely down between May 2021 and July-August 2021, meaning there was no loss of rainfall data over this period (other than at the gauge pushed over by the bear, at the gauge having a broken pivot bolt, and at the gauge hosting the mouse family). The mouse nest inside a rain gauge was the first ever discovered in 14 years of the Duke GSMRGN. Close inspection of the impacted rain gauge record (g #005) to the two nearest gauges (g #002 and #008) shows it is likely the mice "moved in" after 24 July 2021. The nest was discovered inside the rain gauge on 6 August 2021.

Details of every gauge visit along with raw precipitation text and CSV format files are found via Google Drive https://drive.google.com/file/d/1wCWzJ1HcFQLlWxcuwPk6aE3KsGdghD6T/view?usp=sharing 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 March 2021 – June 2021 as observed at KAVL are highlighted in yellow in **Appendix A**. The first of the four month period (March 2021) saw a significant amount of above normal rainfall, otherwise monthly amounts fluctuated at, or just above/ below normal.

Plans for the autumn months of 2021

Table 2: Planned gauge visits during the autumn 2021 campaign. DD=gauge data download, MN=general gauge maintenance (cleaning, re-level), CA= rain gauge calibration, CV= vegetation clearing, ECC=electric contact cleaning treatment, and BR = data logger battery replacement.

Date	Gauges Visited	Technicians	Comments
?? Oct 2021	3; 11; 10, 4	Doug + 1 technician	DD, MN, CV, BR
?? Oct 2021	107, 109, 104, 108	Doug + 1 technician	DD, MN, CV, BR
?? Oct 2021	110, 105, 111, 112	Doug + 1 technician	DD, MN, CV, BR
?? Oct 2021	304, 307	Doug + 2 technicians	DD, MN, CV, BR
?? Oct 2021	101, 102, 103, 100T	Doug + 1 technician	DD, MN, CV, BR
?? Nov 2021	303s, 306, 308	Doug + 2 technicians	DD, MN, CV, BR
?? Nov 2021	305, 309, 310	Doug + 2 technicians	DD, MN, CV, BR
?? Nov 2021	311;	Doug + 1 technician	DD, MN, CV, BR
?? Nov 2021	2; 5; 8; 106	Doug + 1 technician	DD, MN, CV, BR
?? Nov 2021	301, 302, 300	Doug + 2 technicians	DD, MN, CV, BR

Gauge visitation in support of the Duke GSMRGN during the autumn 2021 will occur over at least ten days spanning October and November 2021. The primary purpose of the visits will be to download precipitation observations that were made since the previous gauge visits in July and August 2021 [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], clear vegetation (and tree branches) from overhanging gauges [CV in Table 2], and replace ALL logger lithium batteries in anticipation of the cold wintry weather that provides challenging conditions to the smooth operation of lithium batteries. 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 technician roster during the 2020-2021 academic year consisted of Meredith Avison, Marlee Burgess, Lyn Comer, Daniel Fairchild, Andrew Hill, Sarah Langille, Alice Monroe, Zachary Moss, Samuel Peterson, Riley Ross, Jared Sellers, Paige Stedina, and Samantha Wood. New undergraduate research students at UNC Asheville will be recruited as field technicians for the Duke GSMRGN project in the fall 2021 semester. Field technicians Lyn Comer, Andrew Hill, Riley Ross, and Jared Sellers graduated in May 2021 and Meredith Avison will graduate in December 2021.

Table 3: The Duke Great Smoky Mountain Rain Gauge Network is currently (valid as of 10 August 2021) 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	35º23.7’ N	82º54.9’ 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

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CXUS52 KGSP 010817
CF6AVL
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

                                          STATION:   ASHEVILLE NC
                                          MONTH:     MARCH
                                          YEAR:      2021
                                          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  65  39  52   9  13   0 0.56  0.0    0 12.7 28 340   M    M   7 1      37 340
 2  46  35  41  -3  24   0 0.00  0.0    0  7.9 21 340   M    M   1        29 350
 3  61  36  49   5  16   0 0.00  0.0    0  9.1 25 330   M    M   2        32 320
 4  61  38  50   6  15   0 0.00  0.0    0 11.6 23 320   M    M   0        32 330
 5  53  36  45   1  20   0 0.00  0.0    0 13.7 22 350   M    M   0        29 360
 6  51  35  43  -2  22   0 0.00  0.0    0 11.7 22 340   M    M   3        29 330
 7  50  27  39  -6  26   0 0.00  0.0    0  8.9 26 330   M    M   1        34 330
 8  65  26  46   1  19   0 0.00  0.0    0  3.3 12 350   M    M   0 8      17 350
 9  68  27  48   3  17   0 0.00  0.0    0  1.7 14 200   M    M   0        17 200
10  71  29  50   4  15   0 0.00  0.0    0  5.4 20 190   M    M   0        26 180
11  69  43  56  10   9   0 0.00  0.0    0  4.8 18 210   M    M   0        25 220
12  73  41  57  11   8   0    T  0.0    0  6.6 22 340   M    M   4        27 330
13  63  50  57  11   8   0 0.07  0.0    0  4.5 14 350   M    M   9 1      17 340
14  67  50  59  13   6   0 0.04  0.0    0  6.3 20 340   M    M   9 1      23 330
15  55  46  51   4  14   0    T  0.0    0  7.2 14 150   M    M   9 8      21 170
16  49  37  43  -4  22   0 0.71  0.0    0  4.0 13 180   M    M  10 13     15 190
17  66  44  55   8  10   0 0.93  0.0    0  5.4 13 160   M    M   9 12     18 140
18  71  48  60  12   5   0 1.05  0.0    0  9.7 22 330   M    M   9 13     30 210
19  51  39  45  -3  20   0 0.08  0.0    0  9.7 22 330   M    M   8 1      28 340
20  56  31  44  -4  21   0 0.00  0.0    0  3.5 13 100   M    M   1        19  90
21  60  41  51   3  14   0    T  0.0    0  2.6 13 130   M    M   8        18 130
22  66  42  54   5  11   0 0.00  0.0    0  3.5 13 130   M    M   2        18 130
23  60  42  51   2  14   0    T  0.0    0  4.1 15 160   M    M   5        18 160
24  64  53  59  10   6   0 0.05  0.0    0  6.2 20 180   M    M   7 1      24 180
25  59  48  54   5  11   0 3.64  0.0    0  3.8 15 340   M    M   8 13     19 340
26  81  51  66  16   0   1 0.04  0.0    0  6.4 17 310   M    M   3 13     27 320
27  74  45  60  10   5   0 0.39  0.0    0  3.8 24 350   M    M   5 13     33 340
28  67  44  56   6   9   0 0.29  0.0    0 13.2 28 340   M    M   6 13     38 330
29  64  37  51   1  14   0 0.00  0.0    0  9.1 25 340   M    M   0        33 330
30  69  35  52   1  13   0 0.00  0.0    0  6.0 18 200   M    M   2        24 160
31  61  38  50  -1  15   0 1.44  0.0    0  8.5 38 340   M    M   9 1      47 340
================================================================================
SM 1936 1233       422   1  9.29  0.0    214.9          M      137
================================================================================
AV 62.5 39.8                                6.9 FASTST   M    M   4    MAX(MPH)
                                MISC ---->    38 340                  47 340
================================================================================
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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: MARCH
YEAR: 2021
LATITUDE: 35 25 N
LONGITUDE: 82 33 W

[TEMPERATURE DATA]
AVERAGE MONTHLY: 51.1
DPTR FM NORMAL: 4.0
HIGHEST: 81 ON 26
LOWEST: 26 ON 8

[PRECIPITATION DATA]
TOTAL FOR MONTH: 9.29
DPTR FM NORMAL: 5.46
GRTST 24HR 3.68 ON 25-26

SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16
1 = FOG OR MIST
2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH]
MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 0
MIN 32 OR BELOW: 5
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]
0.01 INCH OR MORE: 13
0.10 INCH OR MORE: 8
0.50 INCH OR MORE: 6
1.00 INCH OR MORE: 3

[HDD (BASE 65)]
TOTAL THIS MO. 422
DPTR FM NORMAL -133
TOTAL FM JUL 1 3294
DPTR FM NORMAL -477

[CDD (BASE 65)]
TOTAL THIS MO. 1
DPTR FM NORMAL 0
TOTAL FM JAN 1 1
DPTR FM NORMAL 0

[PRESSURE DATA]
HIGHEST SLP 30.56 ON 9
LOWEST SLP 29.53 ON 18

[REMARKS]
#FINAL-03-21#

100
CXUS52 KGSP 010817
CF6AVL
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: ASHEVILLE NC
MONTH: APRIL
YEAR: 2021
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	42	32	37	-14	28	0	0.00	0.0	0	19.6	33	330	M	M	3		43	330
2	45	26	36	-16	29	0	0.00	0.0	0	12.9	24	350	M	M	2		33	330
3	60	25	43	-9	22	0	0.00	0.0	0	1.8	13	210	M	M	0		15	220
4	70	31	51	-1	14	0	0.00	0.0	0	5.7	17	340	M	M	0		25	330
5	74	36	55	3	10	0	0.00	0.0	0	2.8	13	170	M	M	0	8	21	170
6	77	41	59	6	6	0	0.00	0.0	0	3.9	14	340	M	M	0	8	19	350
7	80	44	62	9	3	0	0.00	0.0	0	4.0	13	160	M	M	0		16	150
8	72	48	60	7	5	0	T	0.0	0	5.7	18	170	M	M	3	8	25	180
9	79	49	64	10	1	0	T	0.0	0	5.7	23	200	M	M	1	38	33	230
10	63	53	58	4	7	0	1.06	0.0	0	6.1	22	170	M	M	8	1	32	160
11	73	48	61	7	4	0	0.00	0.0	0	6.3	22	310	M	M	2	12	28	290
12	77	44	61	7	4	0	0.00	0.0	0	10.2	26	340	M	M	0		42	310
13	75	51	63	8	2	0	T	0.0	0	4.8	21	340	M	M	2		26	330
14	78	45	62	7	3	0	T	0.0	0	6.4	23	210	M	M	4	8	32	210
15	64	47	56	1	9	0	0.01	0.0	0	13.9	30	340	M	M	4	8	36	330
16	65	41	53	-2	12	0	0.00	0.0	0	9.1	25	330	M	M	0		31	330
17	64	47	56	0	9	0	T	0.0	0	5.2	18	330	M	M	7	8	22	330
18	69	44	57	1	8	0	0.00	0.0	0	7.6	15	340	M	M	3		20	340
19	66	45	56	0	9	0	0.00	0.0	0	8.5	25	340	M	M	3	8	31	350
20	69	40	55	-1	10	0	0.00	0.0	0	6.6	22	210	M	M	2		31	170
21	52	34	43	-14	22	0	0.00	0.0	0	15.2	32	340	M	M	2		44	340
22	57	28	43	-14	22	0	0.00	0.0	0	8.8	21	310	M	M	0		30	340
23	59	31	45	-12	20	0	0.00	0.0	0	3.3	13	190	M	M	4		18	190
24	52	43	48	-10	17	0	0.71	0.0	0	2.7	13	150	M	M	8	1	21	160
25	63	46	55	-3	10	0	0.01	0.0	0	11.8	33	330	M	M	5	1	41	330
26	74	38	56	-2	9	0	0.00	0.0	0	4.4	14	180	M	M	0	8	19	140
27	81	46	64	6	1	0	0.00	0.0	0	6.5	22	190	M	M	0	8	28	210
28	81	56	69	10	0	4	0.00	0.0	0	4.0	18	220	M	M	2	8	24	220
29	83	60	72	13	0	7	T	0.0	0	7.8	22	330	M	M	2		27	210
30	73	55	64	5	1	0	0.03	0.0	0	14.9	26	330	M	M	3	18	40	320
SM	2037	1274			297	11	1.82	0.0		226.2			M		70			
AV	67.9	42.5								7.5	FASTST		M	M	2		MAX(MPH)	
								MISC ---->		#	33	330					44	340

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: APRIL
YEAR: 2021
LATITUDE: 35 25 N
LONGITUDE: 82 33 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 55.2
DPTR FM NORMAL: 0.0
HIGHEST: 83 ON 29
LOWEST: 25 ON 3

[PRECIPITATION DATA]

TOTAL FOR MONTH: 1.82
DPTR FM NORMAL: -1.51
GRTST 24HR 1.06 ON 9-10

SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 0
MIN 32 OR BELOW: 6
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 5
0.10 INCH OR MORE: 2
0.50 INCH OR MORE: 2
1.00 INCH OR MORE: 1

[HDD (BASE 65)]
TOTAL THIS MO. 297
DPTR FM NORMAL -3
TOTAL FM JUL 1 3591
DPTR FM NORMAL -482

[CDD (BASE 65)]
TOTAL THIS MO. 11
DPTR FM NORMAL 4
TOTAL FM JAN 1 12
DPTR FM NORMAL 4

CLEAR (SCALE 0-3) 23
PTCLDY (SCALE 4-7) 6
CLOUDY (SCALE 8-10) 1

[PRESSURE DATA]
HIGHEST SLP 30.48 ON 3
LOWEST SLP 29.53 ON 11

[REMARKS]
#FINAL-04-21#

000
CXUS52 KGSP 010817
CF6AVL
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: ASHEVILLE NC
MONTH: MAY
YEAR: 2021
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	76	49	63	2	2	0	0.00	0.0	0	6.2	17	350	M	M	0		27	340
2	75	46	61	-1	4	0	0.00	0.0	0	5.6	20	210	M	M	3	1	27	170
3	69	60	65	3	0	0	1.79	0.0	0	6.9	22	210	M	M	6	1	27	200
4	71	57	64	2	1	0	0.48	0.0	0	4.3	15	360	M	M	6	123	20	350
5	77	53	65	3	0	0	0.00	0.0	0	10.9	23	340	M	M	4		32	340
6	66	45	56	-6	9	0	0.00	0.0	0	8.7	18	330	M	M	2		24	340
7	62	42	52	-11	13	0	0.00	0.0	0	12.0	31	330	M	M	3		42	350
8	68	38	53	-10	12	0	0.00	0.0	0	5.2	21	320	M	M	5		26	300
9	75	45	60	-3	5	0	T	0.0	0	8.7	29	190	M	M	2		37	210
10	76	55	66	3	0	1	0.04	0.0	0	7.6	18	340	M	M	3	1	26	340
11	68	50	59	-5	6	0	0.00	0.0	0	3.5	13	160	M	M	7		17	160
12	59	45	52	-12	13	0	0.57	0.0	0	3.6	13	330	M	M	10	1	15	330
13	65	43	54	-10	11	0	0.01	0.0	0	3.0	8	130	M	M	7	1	12	120
14	64	46	55	-9	10	0	T	0.0	0	2.0	16	210	M	M	9	8	21	220
15	71	45	58	-6	7	0	0.00	0.0	0	2.5	10	180	M	M	5		15	220
16	72	53	63	-2	2	0	0.00	0.0	0	2.4	10	330	M	M	8	8	15	330
17	74	50	62	-3	3	0	0.00	0.0	0	3.8	13	160	M	M	4	1	18	170
18	68	58	63	-2	2	0	0.00	0.0	0	3.7	9	150	M	M	3		13	150
19	74	53	64	-1	1	0	0.00	0.0	0	3.9	13	170	M	M	3	12	20	170
20	77	53	65	-1	0	0	0.00	0.0	0	3.7	15	160	M	M	3	8	20	170
21	80	51	66	0	0	1	0.00	0.0	0	3.1	15	160	M	M	1	8	18	160
22	83	52	68	2	0	3	0.00	0.0	0	3.6	18	330	M	M	0	1	23	320
23	85	56	71	5	0	6	0.00	0.0	0	5.8	17	340	M	M	0		23	340
24	88	56	72	5	0	7	0.00	0.0	0	2.9	13	330	M	M	2	8	16	340
25	86	59	73	6	0	8	T	0.0	0	3.3	14	340	M	M	2	8	19	190
26	88	59	74	7	0	9	T	0.0	0	3.8	17	330	M	M	3	18	21	330
27	84	56	70	3	0	5	T	0.0	0	4.5	15	220	M	M	4	8	20	220
28	84	63	74	6	0	9	0.48	0.0	0	6.1	26	220	M	M	6	128	37	210
29	71	54	63	-5	2	0	T	0.0	0	9.6	24	340	M	M	7		34	330
30	66	51	59	-9	6	0	0.00	0.0	0	10.6	22	340	M	M	6		30	340
31	73	47	60	-8	5	0	0.00	0.0	0	3.6	14	180	M	M	1		17	180

```
================================================================================
SM 2295 1590       114  49  3.37  0.0    165.1          M      125
================================================================================
AV 74.0 51.3                                5.3 FASTST   M    M   4    MAX(MPH)
                                 MISC ---->    31 330                  42 350
================================================================================
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:     MAY
                                          YEAR:      2021
                                          LATITUDE:   35 25 N
                                          LONGITUDE:  82 33 W

[TEMPERATURE DATA]      [PRECIPITATION DATA]       SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 62.7   TOTAL FOR MONTH:   3.37    1 = FOG OR MIST
DPTR FM NORMAL:  -2.1   DPTR FM NORMAL:   -0.76    2 = FOG REDUCING VISIBILITY
HIGHEST:    88 ON 26,24  GRTST 24HR  1.80 ON  2- 3      TO 1/4 MILE OR LESS
LOWEST:     38 ON  8                               3 = THUNDER
                        SNOW, ICE PELLETS, HAIL    4 = ICE PELLETS
                        TOTAL MONTH:   0.0 INCH    5 = HAIL
                        GRTST 24HR  0.0            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:   6
MAX 90 OR ABOVE:   0    0.10 INCH OR MORE:   4
MIN 32 OR BELOW:   0    0.50 INCH OR MORE:   2
MIN  0 OR BELOW:   0    1.00 INCH OR MORE:   1

[HDD (BASE 65) ]
TOTAL THIS MO.   114    CLEAR  (SCALE 0-3)  14
DPTR FM NORMAL    30    PTCLDY (SCALE 4-7)  15
TOTAL FM JUL 1  3705    CLOUDY (SCALE 8-10)  2
DPTR FM NORMAL  -128

[CDD (BASE 65) ]
TOTAL THIS MO.    49
DPTR FM NORMAL   -27    [PRESSURE DATA]
TOTAL FM JAN 1    61    HIGHEST SLP 30.48 ON 21
DPTR FM NORMAL   -30    LOWEST  SLP 29.72 ON 29

[REMARKS]
#FINAL-05-21#

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509
CXUS52 KGSP 010817
CF6AVL
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

                                          STATION:   ASHEVILLE NC
                                          MONTH:     JUNE
                                          YEAR:      2021
                                          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	76	51	64	-5	1	0	0.00	0.0	0	1.1	12	170	M	M	4	8	16	130
2	75	55	65	-4	0	0	T	0.0	0	8.7	14	160	M	M	2	8	22	170
3	77	59	68	-1	0	3	0.17	0.0	0	2.5	13	320	M	M	4	1	16	240
4	83	63	73	4	0	8	T	0.0	0	6.3	14	340	M	M	5	18	22	340
5	84	59	72	2	0	7	T	0.0	0	4.0	13	170	M	M	3		20	240
6	83	66	75	5	0	10	0.02	0.0	0	4.5	14	180	M	M	4		17	190
7	81	68	75	5	0	10	0.34	0.0	0	7.8	21	190	M	M	7	18	26	190
8	82	64	73	3	0	8	0.04	0.0	0	4.5	13	230	M	M	6	1	19	230
9	83	65	74	4	0	9	1.61	0.0	0	4.6	25	220	M	M	4	138	43	220
10	81	67	74	3	0	9	0.02	0.0	0	4.1	16	190	M	M	6	18	22	210
11	81	67	74	3	0	9	1.92	0.0	0	3.8	17	330	M	M	7	1238	26	340
12	81	66	74	3	0	9	0.41	0.0	0	6.9	18	330	M	M	5	13	24	350
13	85	64	75	4	0	10	0.02	0.0	0	2.7	10	120	M	M	5	1238	16	70
14	88	64	76	4	0	11	T	0.0	0	6.6	17	330	M	M	2	1	25	340
15	81	61	71	-1	0	6	0.00	0.0	0	8.6	21	340	M	M	0		29	320
16	80	60	70	-2	0	5	0.00	0.0	0	8.2	18	340	M	M	2	8	24	330
17	81	54	68	-4	0	3	0.00	0.0	0	5.4	15	330	M	M	0		19	20
18	85	55	70	-2	0	5	0.00	0.0	0	4.1	16	210	M	M	1	8	22	210
19	85	61	73	0	0	8	0.00	0.0	0	6.0	18	220	M	M	1	138	24	200
20	80	64	72	-1	0	7	0.49	0.0	0	2.6	9	180	M	M	7	1	13	180
21	87	64	76	3	0	11	0.09	0.0	0	7.6	18	200	M	M	2	138	29	250
22	75	59	67	-6	0	2	0.48	0.0	0	6.6	21	340	M	M	5	1	28	340
23	76	56	66	-7	0	1	0.00	0.0	0	4.2	13	170	M	M	6	8	19	160
24	76	60	68	-6	0	3	0.00	0.0	0	4.1	13	160	M	M	6	8	17	170
25	78	60	69	-5	0	4	0.00	0.0	0	3.5	10	160	M	M	4	8	15	160
26	81	55	68	-6	0	3	0.00	0.0	0	4.5	14	160	M	M	2	8	19	120
27	83	67	75	1	0	10	0.08	0.0	0	3.6	13	170	M	M	6	18	18	170
28	86	65	76	2	0	11	T	0.0	0	3.1	12	140	M	M	2	1	17	130
29	77	68	73	-1	0	8	0.16	0.0	0	2.3	14	160	M	M	8	123	20	170
30	86	63	75	1	0	10	0.00	0.0	0	3.1	12	180	M	M	5	1238	16	200
SM	2437	1850			1	200	5.85	0.0		145.6				M		121		
AV	81.2	61.7									4.9	FASTST		M	M	4	MAX(MPH)	
									MISC ---->			25 220					43 220	

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: JUNE
YEAR: 2021
LATITUDE: 35 25 N
LONGITUDE: 82 33 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 71.5
DPTR FM NORMAL: -0.4
HIGHEST: 88 ON 14
LOWEST: 51 ON 1

[PRECIPITATION DATA]

TOTAL FOR MONTH: 5.85
DPTR FM NORMAL: 1.06
GRTST 24HR 1.93 ON 11-12

SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 0
MIN 32 OR BELOW: 0
MIN 0 OR BELOW: 0

[HDD (BASE 65)]
TOTAL THIS MO. 1
DPTR FM NORMAL -7
TOTAL FM JUL 1 3706
DPTR FM NORMAL -132

[CDD (BASE 65)]
TOTAL THIS MO. 200
DPTR FM NORMAL -12
TOTAL FM JAN 1 261
DPTR FM NORMAL -42

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 14
0.10 INCH OR MORE: 8
0.50 INCH OR MORE: 2
1.00 INCH OR MORE: 2

CLEAR (SCALE 0-3) 11
PTCLDY (SCALE 4-7) 18
CLOUDY (SCALE 8-10) 1

[PRESSURE DATA]
HIGHEST SLP 30.31 ON 24
LOWEST SLP 29.76 ON 21

9 = BLOWING SNOW
X = TORNADO

[REMARKS]
#FINAL-06-21#
