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Status

Table 1: Gauge visits during the spring 2022 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
3/18/2022	100T, 105*, 110	Doug, Marlee	DD, MN, CV, CA	any vehicle
3/19/2022	105, 111**, 112	Doug, Alice	DD, MN, CV, CA	4wd needed
3/27/2022	11; 3	Doug, Sarah	DD, MN, CV, CA	4wd needed
4/1/2022	101, 102, 103	Doug, Josh	DD, MN, CV, CA	any vehicle
4/2/2022	4; 106; 109	Doug, Alice, Zach	DD, MN, CV, CA	4wd needed
4/9/2022***	305, 309, 310	Doug, Sam, Marlee, Zach	DD, MN, CV, CA	4wd needed
4/16/2022	311, 111	Doug, Michelle, Jackson	DD, MN, CV, CA	any vehicle
4/22/2022	10; 110	Doug, Marlee	DD, MN, CV, CA	any vehicle
4/23/2022	303s, 306	Doug, Jackson, Josh	DD, MN, CV, CA	any vehicle
4/29/2022	104, 107, 108	Doug, Taylor	DD, MN, CV, CA	any vehicle
4/30/2022	300, 308	Doug, Michelle, Daniel	DD, MN, CV, CA	any vehicle
5/6/2022^4	301, 302	Doug, Josh, Zach	DD, MN, CV, CA	any vehicle
5/9/2022	305, 309, 310	Doug, Sam, Marlee	DD, MN, CV, CA	4wd needed
5/13/2022^5	2; 5; 8	Doug	DD, MN, CV, CA	any vehicle
5/14/2022	304, 307^6	Doug, Josh	DD, MN, CV, CA	4wd needed
5/17/2022	2; 5; 8	Doug	DD, MN, CV, CA	any vehicle
5/18/2022	301, 302	Doug, Josh	DD, MN, CV, CA	any vehicle

*==>rain on 18 Mar 2022 prevented calibration trials at g105, **==>very strong wind gusts knocked over tripod at Hurricane Ridge...must complete calibration trials at a later date [16 April 2022], ***==>snow and wind require postponement of calibration trials, ^4==> extratropical cyclone with strong winds and ~1.00 rain accumulation; inappropriate for calibration trials, ^5==> tree clearance work needed on backcountry roadway, ^6==> tree fell on g #307 on 3 January 2022

Gauge visitation in support of the Duke Great Smoky Mountain Rain Gauge Network (GSMRGN) during the spring 2022 campaign occurred over fourteen days spanning a period of ten weeks in March - May 2022. The primary purpose of the visits in the spring 2022 was [1] to perform downloads of gauge tip observations since the previous gauge visits in the autumn 2021, [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 spring 2021. Eleven 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]. The primary specialized task was the

replacement and repair to gauges experiencing damage due to tampering by bears (g #110 and g#111). The former gauge (#110) has recently had a consistent problem with being pushed over by a bear. A fence was installed about g #110 on 22 April 2022 to discourage continued problems. A motion-activated alarm failed to prevent the bear from tampering with the gauge. The latter gauge (#111) was a rare event. Unfortunately, the gauge cover was pulled off, the data logger was exposed to the weather elements for an indeterminate period, and the gauge tip observations were irretrievable from the damaged data logger. The minimally damaged rain gauge funnel cover was retrieved down the mountain from the gauge location and a new logger was installed on 19 March 2022. The bear had to climb over the fence to tear the funnel cover from the rain gauge base. It is hypothesized the bear mistook the rain gauge for a bird feeder (food source) as the gauge rests on property at the top of a mountain on which numerous houses are situated mid-mountain and at its base. 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 unlevelled, and fixing or replacing the gauge mesh if it had been damaged. 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. Task (4) was completed successfully in every data logger at each of the functional rain gauge locations. The strict weather requirements for conducting field calibration trials required multiple visits at two gauge locations (g #105 and #111) when developing rain or strong wind conditions made completion of the trials during the initial visit impossible. Unfavorable weather conditions forced the postponement of two scheduled treks (9 April 2022, and 6 May 2022), thereby delaying completion of the Spring 2022 gauge visit campaign.

Additional challenges encountered during some of the gauge visits in the spring 2022 were primarily the result of a strong winter storm that occurred on 3 January 2022. A tree was felled that landed directly on g #307 (Balsam Mountain Trail) that will require its replacement over the next month. A replacement gauge will be calibrated soon and transported, along with needed hardware and supplies to install it before the end of the spring season. The data logger and functional spare parts were retrieved from g #307 on the day of the initial visit (14 May 2022). Another continuous challenge continues to be the poor performance of the ML1 software ‘TA’ setting in the older loggers, which seems to have a poor time adjustment algorithm, forcing TA to be shut “off” until the next gauge visit. New data loggers have gradually replaced old loggers at the most remote rain gauge locations of the GSMNP. Fortunately, no data loggers were found to have run the battery completely down over the cool season, between November 2021 and May 2022. Hence, there was no loss of rainfall data over this period (other than at two gauges experiencing tampering by a bear and post January 3 at g #307) due to factors within our control.

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/1AN2sfEtrqIVo-1UwQQmVxGstA0VrD3I9/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 October 2021 – February 2022 as observed at KAVL are highlighted in yellow in **Appendix A**. The first and final month of the five-month period saw a significant amount of above normal rainfall, otherwise monthly amounts were below normal.

Table 2: Planned gauge visits during the summer 2022 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
7/??/2022	3; 11; 107; 109	Doug + 1 field technician	DD, MN, CV, ECC
7/??/2022	2; 5; 8; 106; 10	Doug + 1 field technician	DD, MN, CV, ECC
7/??/2022	4; 104, 110, 105	Doug + 1 field technician	DD, MN, CV, ECC
7/??/2022	111, 112, 311	Doug + 1 field technician	DD, MN, CV, ECC
7/??/2022	101, 102, 103, 100T, 108	Doug + 1 field technician	DD, MN, CV, ECC
7/??/2022	303s, 306, 308	Doug + 2 field technicians	DD, MN, CV, ECC
8/??/2022	304, 307, 305, 309, 310	Doug + 2 field technicians	DD, MN, CV, ECC
8/??/2022	301, 302, 300	Doug + 2 field technicians	DD, MN, CV, ECC

Gauge visitation in support of the Duke GSMRGN during the summer 2022 will occur over at least eight days spanning July and August 2022. The primary purpose of the visits will be to download precipitation observations that were made since the previous gauge visits in March - May 2022 [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], and electronic contact cleaning [ECC 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 technician roster during the 2021-2022 academic year consisted of Marlee Burgess, Jackson Coley, Daniel Fairchild, Michelle Hauser, Sarah Langille, Alice Monroe, Zachary Moss, Samuel Peterson, Taylor Ross, Paige Stedina, and Josh Ward. New undergraduate research students at UNC Asheville will be recruited as field technicians for the Duke GSMRGN project in the Fall 2022. Field technicians Marlee Burgess, Michelle Hauser, Alice Monroe, Samuel Peterson, and Taylor Ross graduated in May 2022.

Table 3: The Duke Great Smoky Mountain Rain Gauge Network is currently (valid as of 23 May 2022) 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 [to be replaced]	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 011557
 CF6AVL
 PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: ASHEVILLE NC
 MONTH: OCTOBER
 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		
				DEP	HDD	CDD	WTR	SNW	DPHTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR		
				AVG	MAX	MIN	AVG	12Z	AVG	MX	2MIN									
1	77	57	67	4	0	2	0.00	0.0	0	2.3	12	170	M	M	5	18	15	150		
2	79	62	71	8	0	6	0.00	0.0	0	4.2	13	220	M	M	7	18	20	200		
3	75	57	66	3	0	1	0.27	0.0	0	3.9	16	180	M	M	8	128	22	200		
4	75	61	68	6	0	3	0.06	0.0	0	3.4	12	180	M	M	7	1	14	190		
5	73	62	68	6	0	3	0.33	0.0	0	2.4	10	180	M	M	9	1	12	110		
6	70	64	67	5	0	2	0.88	0.0	0	3.6	17	170	M	M	9	1	23	170		
7	70	60	65	4	0	0	2.92	0.0	0	2.9	13	330	M	M	10	1	17	10		
8	73	64	69	8	0	4	0.44	0.0	0	2.6	12	160	M	M	9	1	14	170		
9	77	61	69	9	0	4	0.04	0.0	0	4.6	16	330	M	M	7	1	22	320		
10	79	58	69	9	0	4	0.00	0.0	0	3.5	10	330	M	M	5		14	150		
11	76	61	69	9	0	4	0.00	0.0	0	5.1	12	160	M	M	6	8	17	130		
12	79	57	68	9	0	3	0.00	0.0	0	1.5	9	340	M	M	5	18	12	330		
13	78	59	69	10	0	4	0.00	0.0	0	2.7	9	330	M	M	5	128	11	320		
14	80	57	69	10	0	4	0.00	0.0	0	3.8	12	340	M	M	1	18	17	320		
15	80	58	69	11	0	4	0.00	0.0	0	2.4	12	160	M	M	4	128	14	160		
16	69	49	59	1	6	0	0.00	0.0	0	10.6	30	310	M	M	3	1	38	320		
17	60	43	52	-6	13	0	0.00	0.0	0	11.4	23	330	M	M	0		31	330		
18	69	37	53	-4	12	0	0.00	0.0	0	4.7	14	330	M	M	0		19	320		
19	73	37	55	-2	10	0	0.00	0.0	0	2.1	8	330	M	M	0	8	11	170		
20	74	39	57	1	8	0	0.00	0.0	0	3.5	14	330	M	M	0	8	20	340		
21	73	41	57	1	8	0	T	0.0	0	5.0	14	210	M	M	3	18	20	200		
22	68	52	60	4	5	0	0.00	0.0	0	8.3	17	330	M	M	3	128	22	340		
23	69	47	58	3	7	0	0.00	0.0	0	6.0	17	340	M	M	2		23	340		
24	72	41	57	2	8	0	0.00	0.0	0	3.9	13	160	M	M	1	18	17	120		
25	73	50	62	7	3	0	0.10	0.0	0	6.9	22	190	M	M	3	128	29	340		
26	57	44	51	-3	14	0	0.00	0.0	0	12.0	26	330	M	M	4		35	320		
27	67	42	55	1	10	0	0.00	0.0	0	6.3	24	330	M	M	1	8	34	330		
28	54	41	48	-6	17	0	0.36	0.0	0	4.2	18	180	M	M	6	1	23	170		
29	55	47	51	-2	14	0	0.18	0.0	0	4.9	15	200	M	M	10	12	20	210		
30	56	41	49	-4	16	0	0.04	0.0	0	3.3	9	330	M	M	9	12	12	340		
31	60	48	54	2	11	0	0.02	0.0	0	10.9	21	330	M	M	6	1	28	340		
SM	2190	1597			162	48	5.64	0.0		152.9			M		148					
AV	70.6	51.5								4.9	FASTST		M	M	5		MAX (MPH)			
										MISC	---->	30 310						38 320		

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

[TEMPERATURE DATA] [PRECIPITATION DATA] SYMBOLS USED IN COLUMN 16
AVERAGE MONTHLY: 61.1 TOTAL FOR MONTH: 5.64 1 = FOG OR MIST
DPTR FM NORMAL: 3.2 DPTR FM NORMAL: 2.27 2 = FOG REDUCING VISIBILITY
HIGHEST: 80 ON 15,14 GRTST 24HR 2.94 ON 7- 8 TO 1/4 MILE OR LESS
LOWEST: 37 ON 19,18 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
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH] [WEATHER - DAYS WITH]
MAX 32 OR BELOW: 0 0.01 INCH OR MORE: 12
MAX 90 OR ABOVE: 0 0.10 INCH OR MORE: 8
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. 162 CLEAR (SCALE 0-3) 10
DPTR FM NORMAL -77 PTCLDY (SCALE 4-7) 15
TOTAL FM JUL 1 193 CLOUDY (SCALE 8-10) 6
DPTR FM NORMAL -81

[CDD (BASE 65)]
TOTAL THIS MO. 48
DPTR FM NORMAL 29 [PRESSURE DATA]
TOTAL FM JAN 1 1004 HIGHEST SLP 30.31 ON 20
DPTR FM NORMAL -43 LOWEST SLP 29.45 ON 29

[REMARKS]
#FINAL-10-21#

000
CXUS52 KGSP 061817
CF6AVL
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: ASHEVILLE NC
MONTH: NOVEMBER
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	67	44	56	4	9	0	0.00	0.0	0	7.0	17	340	M	M	1	24	330
2	58	42	50	-2	15	0	0.00	0.0	0	7.2	18	340	M	M	6	24	340
3	45	41	43	-8	22	0	T	0.0	0	5.2	14	340	M	M	10	20	320
4	42	37	40	-11	25	0	0.16	0.0	0	2.8	8	180	M	M	10 1	10	180
5	50	35	43	-8	22	0	0.00	0.0	0	2.6	10	180	M	M	4	16	160
6	54	32	43	-7	22	0	0.00	0.0	0	5.8	13	350	M	M	0	19	350
7	62	33	48	-2	17	0	0.00	0.0	0	10.1	21	330	M	M	0	26	330
8	71	38	55	5	10	0	0.00	0.0	0	4.4	13	330	M	M	0	17	330
9	77	32	55	5	10	0	0.00	0.0	0	1.4	10	190	M	M	0 1	13	190
10	75	40	58	9	7	0	0.00	0.0	0	3.2	10	130	M	M	0	16	140
11	58	40	49	0	16	0	0.61	0.0	0	2.6	10	280	M	M	7 18	15	180
12	63	40	52	3	13	0	0.00	0.0	0	3.7	13	360	M	M	1 1	20	340
13	47	34	41	-7	24	0	0.00	0.0	0	10.3	23	330	M	M	1	29	340
14	56	27	42	-6	23	0	0.00	0.0	0	4.5	16	320	M	M	1	21	320
15	53	33	43	-5	22	0	0.00	0.0	0	6.9	20	320	M	M	1	25	320
16	68	29	49	1	16	0	0.00	0.0	0	2.0	12	150	M	M	1	15	150
17	69	36	53	6	12	0	0.00	0.0	0	4.8	20	190	M	M	0	26	180
18	69	38	54	7	11	0	0.00	0.0	0	7.7	23	350	M	M	4 18	35	340
19	53	30	42	-5	23	0	0.00	0.0	0	11.0	26	340	M	M	0	36	340
20	50	24	37	-9	28	0	0.00	0.0	0	3.7	10	150	M	M	0	15	180
21	61	25	43	-3	22	0	0.00	0.0	0	4.6	17	190	M	M	2	24	210
22	50	32	41	-5	24	0	0.11	0.0	0	10.2	21	340	M	M	5 1	29	340
23	43	26	35	-11	30	0	0.00	0.0	0	9.0	20	340	M	M	0	28	340
24	53	21	37	-9	28	0	0.00	0.0	0	2.5	9	130	M	M	0 8	14	150
25	63	28	46	1	19	0	0.00	0.0	0	3.0	14	330	M	M	2	17	340
26	49	29	39	-6	26	0	0.00	0.0	0	12.9	26	330	M	M	3	34	340
27	56	27	42	-3	23	0	0.00	0.0	0	4.0	14	340	M	M	0	17	340
28	55	31	43	-2	22	0	0.00	0.0	0	9.1	17	330	M	M	0	25	340
29	43	27	35	-9	30	0	0.00	0.0	0	11.2	23	320	M	M	0 8	29	320
30	61	25	43	-1	22	0	0.00	0.0	0	4.4	14	330	M	M	0 8	17	330

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SM	1721	976		593	0	0.88	0.0		177.8				M		59		
----	------	-----	--	-----	---	------	-----	--	-------	--	--	--	---	--	----	--	--

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AV	57.4	32.5							5.9	FASTST	M	M	2		MAX(MPH)		
									MISC	---->	#	26	340		36	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: 2021
LATITUDE: 35 25 N
LONGITUDE: 82 33 W

[TEMPERATURE DATA]	[PRECIPITATION DATA]	SYMBOLS USED IN COLUMN 16
AVERAGE MONTHLY: 44.9	TOTAL FOR MONTH: 0.88	1 = FOG OR MIST
DPTR FM NORMAL: -2.9	DPTR FM NORMAL: -2.84	2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
HIGHEST: 77 ON 9	GRTST 24HR 0.61 ON 11-11	3 = THUNDER
LOWEST: 21 ON 24		4 = ICE PELLETS
	SNOW, ICE PELLETS, HAIL	5 = HAIL
	TOTAL MONTH: 0.0 INCH	6 = FREEZING RAIN OR DRIZZLE
	GRTST 24HR 0.0	7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS
	GRTST DEPTH: 0	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: 3	
MAX 90 OR ABOVE: 0	0.10 INCH OR MORE: 3	
MIN 32 OR BELOW: 16	0.50 INCH OR MORE: 1	

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

[HDD (BASE 65)]
TOTAL THIS MO. 593 CLEAR (SCALE 0-3) 23
DPTR FM NORMAL 76 PTCLDY (SCALE 4-7) 5
TOTAL FM JUL 1 786 CLOUDY (SCALE 8-10) 2
DPTR FM NORMAL -5

[CDD (BASE 65)]
TOTAL THIS MO. 0
DPTR FM NORMAL -1 [PRESSURE DATA]
TOTAL FM JAN 1 1004 HIGHEST SLP 30.54 ON 20
DPTR FM NORMAL -44 LOWEST SLP 29.87 ON 14

[REMARKS]
#FINAL-11-21#

000
CXUS52 KGSP 011912
CF6AVL
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: ASHEVILLE NC
MONTH: DECEMBER
YEAR: 2021
LATITUDE: 35 25 N
LONGITUDE: 82 33 W

Table with columns: TEMPERATURE IN F, PCPN, SNOW, WIND, SUNSHINE, SKY, PK WND. Rows 1-28 showing daily weather data including max/min temperatures, precipitation, wind speed/direction, and sunshine.

```

29 67 59 63 23 2 0 0.11 0.0 0 10.3 23 330 M M 8 1 34 330
30 64 50 57 18 8 0 0.13 0.0 0 4.3 13 190 M M 4 12 19 360
31 66 46 56 17 9 0 0.00 0.0 0 4.4 21 190 M M 8 12 26 190
=====
SM 1884 1082 525 0 0.93 T 174.8 M 93
=====
AV 60.8 34.9 5.6 FASTST M M 3 MAX(MPH)
MISC ----> 30 340 # 37 330
=====

```

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

[TEMPERATURE DATA]	[PRECIPITATION DATA]	SYMBOLS USED IN COLUMN 16
AVERAGE MONTHLY: 47.8	TOTAL FOR MONTH: 0.93	1 = FOG OR MIST
DPTR FM NORMAL: 6.4	DPTR FM NORMAL: -3.25	2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
HIGHEST: 76 ON 3	GRTST 24HR 0.29 ON 18-19	3 = THUNDER
LOWEST: 23 ON 14	SNOW, ICE PELLETS, HAIL	4 = ICE PELLETS
	TOTAL MONTH: T	5 = HAIL
	GRTST 24HR T ON 21-21	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: 5
MIN 32 OR BELOW: 14	0.50 INCH OR MORE: 0
MIN 0 OR BELOW: 0	1.00 INCH OR MORE: 0

[HDD (BASE 65)]	
TOTAL THIS MO. 525	CLEAR (SCALE 0-3) 18
DPTR FM NORMAL -207	PTCLDY (SCALE 4-7) 10
TOTAL FM JUL 1 1311	CLOUDY (SCALE 8-10) 3
DPTR FM NORMAL -210	

[CDD (BASE 65)]		[PRESSURE DATA]
TOTAL THIS MO. 0		
DPTR FM NORMAL 0		
TOTAL FM JAN 1 1004	HIGHEST SLP 30.56 ON 15	
DPTR FM NORMAL -44	LOWEST SLP 29.73 ON 25	

[REMARKS]
#FINAL-12-21#

000
CXUS52 KGSP 010917
CF6AVL
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: ASHEVILLE NC
MONTH: JANUARY
YEAR: 2022
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	73	54	64	25	1	0	0.22	0.0	0	11.6	22	190	M	M	5	1	29	180	
2	64	50	57	18	8	0	0.74	0.0	0	7.2	21	340	M	M	8	13	31	200	
3	50	26	38	-1	27	0	0.63	T	T	20.8	46	330	M	M	6	13	59	320	
4	43	21	32	-7	33	0	0.00	0.0	0	5.6	14	150	M	M	1		21	350	
5	56	33	45	6	20	0	0.00	0.0	0	4.7	15	200	M	M	2		20	200	
6	48	29	39	0	26	0	0.01	T	0	8.1	28	340	M	M	5	1	36	340	
7	29	21	25	-14	40	0	0.00	0.0	0	10.6	22	330	M	M	3		28	360	
8	41	19	30	-9	35	0	0.00	0.0	0	6.2	15	160	M	M	0		21	110	
9	55	35	45	7	20	0	0.40	0.0	0	10.9	29	330	M	M	10	1	40	330	
10	42	29	36	-2	29	0	0.00	0.0	0	17.1	30	340	M	M	1		40	340	
11	46	22	34	-4	31	0	0.00	0.0	0	6.1	18	340	M	M	0		28	330	
12	53	20	37	-1	28	0	0.00	0.0	0	1.8	9	180	M	M	0		12	180	
13	51	26	39	1	26	0	T	0.0	0	2.7	13	350	M	M	4		19	330	
14	46	31	39	1	26	0	0.00	0.0	0	10.1	22	330	M	M	5		28	320	
15	38	27	33	-5	32	0	T	T	0	5.5	12	160	M	M	8	1	14	140	
16	33	22	28	-10	37	0	1.25	10.4	4	3.2	13	230	M	M	10	124	16	230	
17	33	26	30	-8	35	0	T	T	8	13.4	28	340	M	M	6	1	38	330	
18	42	22	32	-6	33	0	0.00	0.0	7	6.6	17	340	M	M	0		24	340	
19	51	23	37	-1	28	0	0.00	0.0	5	5.9	18	190	M	M	3		24	190	
20	42	28	35	-3	30	0	0.04	0.0	3	10.0	20	340	M	M	10		26	340	
21	32	26	29	-10	36	0	T	T	1	6.2	14	350	M	M	10	18	19	350	
22	44	25	35	-4	30	0	0.00	0.0	1	8.1	13	340	M	M	4		17	340	
23	47	21	34	-5	31	0	0.00	0.0	T	7.5	18	340	M	M	1		23	340	
24	52	29	41	2	24	0	0.00	0.0	T	4.3	14	340	M	M	1		18	340	
25	54	31	43	4	22	0	0.00	0.0	0	8.2	17	340	M	M	1		24	330	
26	41	25	33	-6	32	0	0.00	0.0	0	11.1	23	340	M	M	2		28	340	
27	46	20	33	-6	32	0	0.00	0.0	0	3.1	9	160	M	M	2		13	140	
28	45	27	36	-3	29	0	0.03	0.1	0	8.6	22	330	M	M	9	1	29	360	
29	27	17	22	-17	43	0	0.01	0.1	T	14.1	30	340	M	M	3		42	330	
30	47	12	30	-9	35	0	0.00	0.0	0	3.6	16	180	M	M	0		20	170	
31	53	23	38	-2	27	0	0.00	0.0	0	1.3	8	170	M	M	0		9	330	
SM	1424	820			886	0	3.33	10.6		244.2			M		120				
AV	45.9	26.5								7.9	FASTST		M	M	4		MAX (MPH)		
								MISC	---->	46	330						59	320	

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: 2022
 LATITUDE: 35 25 N
 LONGITUDE: 82 33 W

[TEMPERATURE DATA]

[PRECIPITATION DATA]

SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 36.2
 DPTR FM NORMAL: -2.5
 HIGHEST: 73 ON 1
 LOWEST: 12 ON 30

TOTAL FOR MONTH: 3.33
 DPTR FM NORMAL: -0.80
 GRTST 24HR 1.91 ON 2- 3
 SNOW, ICE PELLETS, HAIL
 TOTAL MONTH: 10.6 INCHES

1 = FOG OR MIST
 2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
 3 = THUNDER
 4 = ICE PELLETS
 5 = HAIL

GRTST 24HR 10.4 ON 16-16 6 = FREEZING RAIN OR DRIZZLE
 GRTST DEPTH: 8 ON 17 7 = DUSTSTORM OR SANDSTORM:
 VSBY 1/2 MILE OR LESS
 8 = SMOKE OR HAZE
 9 = BLOWING SNOW
 X = TORNADO

[NO. OF DAYS WITH] [WEATHER - DAYS WITH]
 MAX 32 OR BELOW: 3 0.01 INCH OR MORE: 9
 MAX 90 OR ABOVE: 0 0.10 INCH OR MORE: 5
 MIN 32 OR BELOW: 27 0.50 INCH OR MORE: 3
 MIN 0 OR BELOW: 0 1.00 INCH OR MORE: 1

[HDD (BASE 65)]
 TOTAL THIS MO. 886 CLEAR (SCALE 0-3) 17
 DPTR FM NORMAL 72 PTCLDY (SCALE 4-7) 9
 TOTAL FM JUL 1 2197 CLOUDY (SCALE 8-10) 5
 DPTR FM NORMAL -136

[CDD (BASE 65)]
 TOTAL THIS MO. 0
 DPTR FM NORMAL 0 [PRESSURE DATA]
 TOTAL FM JAN 1 0 HIGHEST SLP 30.57 ON 8
 DPTR FM NORMAL 0 LOWEST SLP 29.43 ON 17

[REMARKS]
 #FINAL-01-22#

 000
 CXUS52 KGSP 011612
 CF6AVL
 PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: ASHEVILLE NC
 MONTH: FEBRUARY
 YEAR: 2022
 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	51	23	37	-3	28	0	0.00	0.0	0	4.4	14	130	M	M	0		20	120
2	43	27	35	-5	30	0	0.10	0.0	0	4.0	12	150	M	M	7	1	15	150
3	55	37	46	6	19	0	2.38	0.0	0	4.3	14	150	M	M	10	18	17	140
4	59	30	45	5	20	0	0.56	0.0	0	13.5	28	330	M	M	8	1	35	350
5	37	23	30	-10	35	0	T	T	0	11.5	28	340	M	M	2	1	38	340
6	42	20	31	-9	34	0	0.00	0.0	0	3.9	12	150	M	M	0		17	150
7	47	30	39	-2	26	0	0.00	0.0	0	7.7	18	350	M	M	5		25	330
8	49	28	39	-2	26	0	0.00	0.0	0	7.6	21	340	M	M	0		27	330
9	58	22	40	-1	25	0	0.00	0.0	0	1.5	12	290	M	M	1		16	270
10	59	25	42	1	23	0	0.00	0.0	0	5.0	22	290	M	M	0		32	250
11	63	27	45	4	20	0	0.00	0.0	0	5.5	22	200	M	M	0		30	230
12	62	33	48	6	17	0	0.00	0.0	0	7.5	20	330	M	M	2		27	330
13	40	28	34	-8	31	0	T	T	0	13.8	28	340	M	M	4		35	330
14	47	23	35	-7	30	0	0.00	0.0	0	7.6	18	20	M	M	1		24	20
15	51	20	36	-6	29	0	0.00	0.0	0	3.5	12	120	M	M	0		17	160
16	53	27	40	-2	25	0	0.01	0.0	0	5.0	15	180	M	M	7	1	17	160
17	61	48	55	13	10	0	0.75	0.0	0	8.3	28	180	M	M	10	1	36	180
18	60	28	44	1	21	0	0.04	0.0	0	13.2	29	340	M	M	3		36	340
19	51	26	39	-4	26	0	0.00	0.0	0	11.3	23	340	M	M	0		32	340
20	52	23	38	-5	27	0	0.00	0.0	0	5.1	14	190	M	M	0		19	180
21	59	27	43	0	22	0	0.00	0.0	0	7.3	20	220	M	M	5		28	220

22	62	53	58	14	7	0	0.01	0.0	0	11.1	21	210	M	M	8	1	30	170
23	69	53	61	17	4	0	0.84	0.0	0	3.8	20	330	M	M	7	1	23	330
24	73	52	63	19	2	0	0.01	0.0	0	6.5	16	330	M	M	7	1	20	150
25	60	37	49	5	16	0	0.31	0.0	0	13.2	26	330	M	M	5	1	36	330
26	50	35	43	-1	22	0	T	0.0	0	9.2	17	340	M	M	7	8	25	340
27	45	36	41	-3	24	0	0.74	0.0	0	5.7	18	340	M	M	8	1	23	340
28	58	32	45	0	20	0	0.00	0.0	0	4.3	14	330	M	M	0		20	360

```

=====
SM 1516 873          619 0 5.75 T 205.3          M 107
=====
AV 54.1 31.2          7.3 FASTST M M 4 MAX(MPH)
MISC ----> 29 340          38 340
=====

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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: FEBRUARY
 YEAR: 2022
 LATITUDE: 35 25 N
 LONGITUDE: 82 33 W

[TEMPERATURE DATA]	[PRECIPITATION DATA]	SYMBOLS USED IN COLUMN 16
AVERAGE MONTHLY: 42.7	TOTAL FOR MONTH: 5.75	1 = FOG OR MIST
DPTR FM NORMAL: 0.6	DPTR FM NORMAL: 2.29	2 = FOG REDUCING VISIBILITY
HIGHEST: 73 ON 24	GRTST 24HR 2.54 ON 3- 4	TO 1/4 MILE OR LESS
LOWEST: 20 ON 15, 6		3 = THUNDER
	SNOW, ICE PELLETS, HAIL	4 = ICE PELLETS
	TOTAL MONTH: T	5 = HAIL
	GRTST 24HR T ON 5- 5	6 = FREEZING RAIN OR DRIZZLE
	GRTST DEPTH: 0	7 = DUSTSTORM OR SANDSTORM:
		VSBY 1/2 MILE OR LESS
[NO. OF DAYS WITH]	[WEATHER - DAYS WITH]	8 = SMOKE OR HAZE
MAX 32 OR BELOW: 0	0.01 INCH OR MORE: 11	9 = BLOWING SNOW
MAX 90 OR ABOVE: 0	0.10 INCH OR MORE: 7	X = TORNADO
MIN 32 OR BELOW: 19	0.50 INCH OR MORE: 5	
MIN 0 OR BELOW: 0	1.00 INCH OR MORE: 1	
[HDD (BASE 65)]		
TOTAL THIS MO. 619	CLEAR (SCALE 0-3) 14	
DPTR FM NORMAL -24	PTCLDY (SCALE 4-7) 10	
TOTAL FM JUL 1 2816	CLOUDY (SCALE 8-10) 4	
DPTR FM NORMAL -161		

[CDD (BASE 65)]
 TOTAL THIS MO. 0
 DPTR FM NORMAL 0 [PRESSURE DATA]
 TOTAL FM JAN 1 0 HIGHEST SLP 30.59 ON 15
 DPTR FM NORMAL 0 LOWEST SLP 29.72 ON 17

[REMARKS]
 #FINAL-02-22#