Prepared by:
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Undergraduate research students (UNC Asheville):
N/A

Volunteer assistants (other):
Don Elliott (Waynesville Watershed Field Manager)

Index

Status

Table 1: Gauge visits during the summer 2020 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	location
7/2/2020	4; 107; 109; 104; 110	Doug	DD, MN, CV, ECC	4wd needed	Ski Cat, Hawkins, Lookout Point, Eaglesnest Ridge, Richland Balsam
7/3/2020	3; 11; 106; 10	Doug	DD, MN, CV, ECC	4wd needed	Camp Daniel Boone, Pinnacle Ridge, Beaty Spring Gap
7/6/2020	100T, 111, 112, 311	Doug	DD, MN, CV, ECC	any vehicle	Purchase Knob, Hurricane Ridge, Ore Knob, Big Creek
7/14/2020	101, 102, 103, 105, 108	Doug	DD, MN, CV, ECC	any vehicle	The Swag, Hultquist**, Utah Mountain
7/17/2020	305, 309, 310	Doug	DD, MN, CV, ECC	4wd needed	Mt. Sterling
7/20/2020	303s, 306, 308	Doug	DD, MN, CV, ECC	any vehicle	Mt. Cammerer, Sunup Knob, Cosby Knob
7/24/2020	304, 307	Doug	DD, MN, CV	4wd needed	Balsam Mtn. Ridge Trail
7/27/2020	301, 302, 300	Doug	DD, MN, CV, ECC	any vehicle	Mt. Guyot, Snake Den Ridge, Camel Hump Knob
7/31/2020	2; 5; 8;	Doug	DD, MN, CV	any vehicle	Waynesville Watershed

Gauge visitation in support of the Duke Great Smoky Mountain Rain Gauge Network (GSMRGN) during the summer 2020 campaign occurred over nine days spanning a period of four weeks in July 2020. The primary purpose of the visits in the summer 2020 was [1] to perform downloads of gauge tip observations since the previous gauge visits in the spring 2020, [2] to complete rain gauge and data logger maintenance tasks, [3] to clear vegetation and tree limbs and, [4] to apply electronic contact cleaning solution to gauge switch contacts and logger wire leads at most all gauge locations. One volunteer (listed on the front page) made the visits and helped the field manager preform the required tasks. 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. Student field technicians from UNC Asheville were not allowed to assist in fieldwork in the summer 2020 due to strict distancing measures imposed by UNCA due to the COVID-19 pandemic. It is hoped a solution will be found for allowing student assistants to participate in fieldwork by the autumn 2020.

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) application of electronic cleaning solution to gauge switch contacts and logger wire leads [ECC in Table 1]. As the spring 2020 gauge visit campaign progressed, it became obvious that systematic failure due to poor electronic contact between the logger cable leads and the gauge switch metal plates, caused by contamination build-up (e.g., dust, dirt) over the years, required electronic contact cleaner to be sprayed on the logger wires and switch metal plates (ECC in Table 1; refered to as “electronic contact cleaning [ECC] treatment” in the field notes). This procedure was started in the final three day (seven gauge) visits of the spring 2020 visit campaign and completed during the summer 2020 visit campaign. The primary specialized task was the necessary data logger lithium battery replacement at three rain gauge locations (as indicated using a multimeter to test logger battery voltage), at

Double Spring Gap (g #008, 3.56V), Hurricane Ridge (g #111, 3.54V), and Snake Den Ridge (g #302, 3.56V). We have had significant problems with ML1-420 loggers draining the lithium batteries down in a very short period of time. 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. Please read the MS Word document containing the field notes to find a more thorough description of these problems. 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, tree limbs, and other emerging vegetation during the summer season within a five foot radius of the gauge using clippers or weeding by hand. Two locations will need tree limbs cleared using the GSMNP arborist (g #308 and g #311) during the autumn 2020 visit. Task (4) was completed successfully in every data logger at each of the rain gauge locations that were not treated during the spring 2020 campaign.

The primary challenge encountered during the gauge visits in the last half of July 2020 was a particularly active period of thunderstorms and lightning (starting 17 July 2020 and thereafter). A stay in the backcountry shelter at Cosby Knob of 2.5 hours during a lightning storm on 27 July resulted in a marked increase in the flowrate of the normally placid Cosby Creek as the field manager returned to his vehicle,

https://drive.google.com/file/d/1EtgBAIBa2j2Y35foOjq7VB7wWQ4cYbY5/view?usp=sharing .

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/1279Pfx0EsnWRzCjhXd_5NsWwOCNXgiY2/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 – June 2020 as observed at KAVL are highlighted in yellow in **Appendix A**. April and May 2020 showed above normal rainfall, with a significant atmospheric river event on 12, 13 April 2020 contributing to the significant rainfall in this month and further exacerbating the washout of Cataloochee Creek (NPS Ranger, Tom Remaley, personal communication) and contributing to landslides in the mountains (NC Geologist, Rick Wooten, personal communication).

Plans for the autumn months of 2020

Table 2: Planned gauge visits during the autumn 2020 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 2020	3; 11; 10, 4	Doug + 1 technician	DD, MN, CV, BR
?? Oct 2020	107, 109, 104, 108	Doug + 1 technician	DD, MN, CV, BR
?? Oct 2020	110, 105, 111, 112	Doug + 1 technician	DD, MN, CV, BR
?? Oct 2020	304, 307	Doug + 2 technicians	DD, MN, CV, BR
?? Oct 2020	101, 102, 103, 100T	Doug + 1 technician	DD, MN, CV, BR
?? Nov 2020	303s, 306, 308	Doug + 2 technicians	DD, MN, CV, BR
?? Nov 2020	305, 309, 310	Doug + 2 technicians	DD, MN, CV, BR
?? Nov 2020	311;	Doug + 1 technician	DD, MN, CV, BR
?? Nov 2020	2; 5; 8; 106	Doug + 1 technician	DD, MN, CV, BR
?? Nov 2020	301, 302, 300	Doug + 2 technicians	DD, MN, CV, BR

Gauge visitation in support of the Duke GSMRGN during the autumn 2020 will occur over at least ten days spanning October and November 2020. The primary purpose of the visits will be to download precipitation observations that were made since the previous gauge visits in July 2020 [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 2019-2020 academic year consisted of Meredith Avison, Marlee Burgess, Lyn Comer, Andrew Hill, Alice Monroe, Samuel Peterson, and Samantha Wood. New undergraduate research students at UNC Asheville will be recruited as field technicians for the Duke GSMRGN project in the fall 2020.

Table 3: The Duke Great Smoky Mountain Rain Gauge Network is currently (valid as of 31 July 2020) 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 011743
CF6AVL

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

                                          STATION:   ASHEVILLE NC
                                          MONTH:     MARCH
                                          YEAR:      2020
                                          LATITUDE:   35 25 N
                                          LONGITUDE:  82 33 W
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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	59	23	41	-2	24	0	0.00	0.0	0	3.8	13	180	M	M	0		17	180
2	54	44	49	5	16	0	T	0.0	0	9.7	23	210	M	M	5	8	34	210
3	67	47	57	13	8	0	0.70	0.0	0	5.4	17	290	M	M	6	1	24	300
4	58	47	53	9	12	0	0.00	0.0	0	5.1	14	340	M	M	3		18	340
5	53	38	46	2	19	0	0.01	0.0	0	3.5	14	160	M	M	3	12	18	170
6	47	34	41	-4	24	0	T	T	0	15.0	33	330	M	M	9	12	43	340
7	50	31	41	-4	24	0	0.00	0.0	0	16.1	39	340	M	M	4		50	330
8	60	25	43	-2	22	0	0.00	0.0	0	4.4	14	170	M	M	0		18	140
9	63	29	46	1	19	0	0.00	0.0	0	5.8	20	190	M	M	1	8	25	180
10	63	51	57	11	8	0	0.02	0.0	0	9.2	21	210	M	M	8		25	210
11	72	48	60	14	5	0	0.00	0.0	0	4.9	18	340	M	M	5	128	22	340
12	68	40	54	8	11	0	0.00	0.0	0	5.2	20	210	M	M	4		31	200
13	65	55	60	14	5	0	0.03	0.0	0	8.1	22	210	M	M	6	1	29	210
14	64	50	57	11	8	0	T	0.0	0	5.7	13	120	M	M	9	8	17	120
15	67	49	58	11	7	0	T	0.0	0	8.7	20	340	M	M	8		23	340
16	49	43	46	-1	19	0	0.06	0.0	0	7.4	13	180	M	M	10	18	16	160
17	68	44	56	9	9	0	0.06	0.0	0	5.9	18	330	M	M	8	1	21	340
18	59	47	53	5	12	0	0.06	0.0	0	3.8	15	130	M	M	9	128	22	140
19	73	55	64	16	1	0	0.00	0.0	0	6.3	24	200	M	M	4	18	33	200
20	79	58	69	21	0	4	0.09	0.0	0	7.0	21	360	M	M	4	18	29	350
21	69	46	58	10	7	0	T	0.0	0	11.8	29	340	M	M	4		35	340
22	53	42	48	-1	17	0	0.06	0.0	0	5.9	14	160	M	M	7	1	19	160
23	57	45	51	2	14	0	0.64	0.0	0	5.7	14	330	M	M	7	1	18	330
24	55	50	53	4	12	0	1.24	0.0	0	3.9	12	170	M	M	9	138	13	170
25	65	50	58	9	7	0	0.13	0.0	0	7.7	24	340	M	M	6	18	30	340
26	67	41	54	4	11	0	0.00	0.0	0	6.4	16	130	M	M	3	8	21	150
27	85	48	67	17	0	2	0.00	0.0	0	5.6	17	210	M	M	0	8	23	210
28	85	52	69	19	0	4	0.00	0.0	0	6.5	21	200	M	M	0	8	26	200
29	81	54	68	18	0	3	0.19	0.0	0	3.1	10	190	M	M	1	18	M	M
30	69	54	62	11	3	0	0.00	0.0	0	8.6	21	340	M	M	0	18	27	340
31	57	42	50	-1	15	0	0.10	T	0	5.6	20	340	M	M	9	4	28	340
SM	1981	1382			339	13	3.39	T		211.8			M		152			
AV	63.9	44.6								6.8	FASTST		M	M	5		MAX(MPH)	
								MISC ---->		#	39	340					# 50	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: MARCH
YEAR: 2020
LATITUDE: 35 25 N
LONGITUDE: 82 33 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 54.2
DPTR FM NORMAL: 7.1
HIGHEST: 85 ON 28,27
LOWEST: 23 ON 1

[PRECIPITATION DATA]

TOTAL FOR MONTH: 3.39
DPTR FM NORMAL: -0.44
GRTST 24HR 1.37 ON 24-25

SNOW, ICE PELLETS, HAIL
TOTAL MONTH: T
GRTST 24HR T ON 6,31
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: 4
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 14
0.10 INCH OR MORE: 6
0.50 INCH OR MORE: 3
1.00 INCH OR MORE: 1

[HDD (BASE 65)]

TOTAL THIS MO. 339
DPTR FM NORMAL -216
TOTAL FM JUL 1 2942
DPTR FM NORMAL -830

CLEAR (SCALE 0-3) 8
PTCLDY (SCALE 4-7) 15
CLOUDY (SCALE 8-10) 8

[CDD (BASE 65)]

TOTAL THIS MO. 13
DPTR FM NORMAL 12
TOTAL FM JAN 1 13
DPTR FM NORMAL 12

[PRESSURE DATA]

HIGHEST SLP 30.62 ON 8
LOWEST SLP 29.61 ON 31

[REMARKS]
#FINAL-03-20#000

072
CXUS52 KGSP 011715

CF6AVL

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

STATION: ASHEVILLE NC
MONTH: APRIL
YEAR: 2020
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	49	40	45	-6	20	0	0.04	0.0	0	11.2	21	340	M	M	9	1	27	330
2	60	42	51	-1	14	0	0.00	0.0	0	10.9	21	340	M	M	2		26	340
3	72	40	56	4	9	0	0.00	0.0	0	10.3	20	340	M	M	1		26	320
4	73	47	60	8	5	0	T	0.0	0	6.0	20	330	M	M	4		25	340
5	74	47	61	9	4	0	T	0.0	0	3.3	13	210	M	M	4		16	230
6	78	45	62	9	3	0	0.00	0.0	0	3.3	14	330	M	M	3	8	19	360
7	77	48	63	10	2	0	0.00	0.0	0	1.7	13	230	M	M	4	8	17	230
8	80	52	66	13	0	1	0.00	0.0	0	6.5	17	340	M	M	1	8	21	330
9	75	54	65	11	0	0	0.01	0.0	0	12.2	30	310	M	M	1	38	41	310
10	54	40	47	-7	18	0	0.00	0.0	0	14.6	33	340	M	M	1	8	47	330
11	66	33	50	-4	15	0	0.00	0.0	0	6.8	16	190	M	M	0		21	190
12	68	43	56	2	9	0	1.79	0.0	0	7.3	35	180	M	M	6	13	47	180
13	73	50	62	7	3	0	1.53	0.0	0	13.6	35	200	M	M	4	13	53	200
14	72	44	58	3	7	0	0.00	0.0	0	12.0	28	340	M	M	4		34	340
15	56	37	47	-8	18	0	0.00	0.0	0	13.8	26	330	M	M	2		34	340
16	61	32	47	-8	18	0	0.00	0.0	0	8.4	23	340	M	M	0		31	340
17	68	34	51	-5	14	0	0.00	0.0	0	8.6	24	190	M	M	0	8	30	170
18	61	46	54	-2	11	0	0.20	0.0	0	10.4	24	340	M	M	3	1	34	340
19	67	35	51	-5	14	0	0.02	0.0	0	5.3	18	170	M	M	3		23	160
20	65	46	56	0	9	0	0.44	0.0	0	7.8	26	340	M	M	6	1	34	340
21	70	40	55	-2	10	0	0.00	0.0	0	9.3	30	300	M	M	3	8	39	300
22	70	45	58	1	7	0	0.00	0.0	0	6.9	17	330	M	M	1	8	22	350
23	59	50	55	-2	10	0	0.68	0.0	0	6.0	20	160	M	M	10	18	28	150
24	70	52	61	3	4	0	T	0.0	0	8.1	21	340	M	M	5		27	330
25	60	48	54	-4	11	0	0.07	0.0	0	5.0	15	170	M	M	7	12	19	130
26	67	47	57	-1	8	0	T	0.0	0	9.7	25	310	M	M	6	12	33	330
27	68	45	57	-1	8	0	0.00	0.0	0	14.3	29	340	M	M	1		40	340
28	73	38	56	-3	9	0	T	0.0	0	4.8	18	180	M	M	3	8	22	180
29	71	50	61	2	4	0	2.06	0.0	0	12.0	28	170	M	M	6	1	37	200
30	57	49	53	-6	12	0	0.05	0.0	0	6.2	21	330	M	M	8	1	27	330
SM	2014	1319		276	1	6.89		0.0	256.3				M		108			
AV	67.1	44.0								8.5	FASTST		M	M	4		MAX(MPH)	
							MISC ---->			#	35	180					# 53	200

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: 2020
LATITUDE: 35 25 N
LONGITUDE: 82 33 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 55.6
DPTR FM NORMAL: 0.3
HIGHEST: 80 ON 8
LOWEST: 32 ON 16

[PRECIPITATION DATA]

TOTAL FOR MONTH: 6.89
DPTR FM NORMAL: 3.56
GRTST 24HR 3.32 ON 12-13

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: 1
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 11
0.10 INCH OR MORE: 6
0.50 INCH OR MORE: 4
1.00 INCH OR MORE: 3

[HDD (BASE 65)]

TOTAL THIS MO. 276
DPTR FM NORMAL -24
TOTAL FM JUL 1 3218
DPTR FM NORMAL -854

CLEAR (SCALE 0-3) 15
PTCLDY (SCALE 4-7) 13
CLOUDY (SCALE 8-10) 2

[CDD (BASE 65)]

TOTAL THIS MO. 1
DPTR FM NORMAL -6
TOTAL FM JAN 1 14
DPTR FM NORMAL 6

[PRESSURE DATA]

HIGHEST SLP 30.29 ON 17
LOWEST SLP 29.51 ON 20

[REMARKS]
#FINAL-04-20#

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CXUS52 KGSP 011710
CF6AVL

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

STATION: ASHEVILLE NC
MONTH: MAY
YEAR: 2020
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	66	48	57	-2	8	0	0.00	0.0	0	12.4	35	340	M	M	3		46	330
2	77	43	60	0	5	0	0.00	0.0	0	3.9	14	170	M	M	0	8	17	170
3	85	47	66	6	0	1	0.00	0.0	0	8.3	30	310	M	M	0		41	320
4	79	61	70	10	0	5	T	0.0	0	7.9	17	340	M	M	4	8	23	330
5	71	56	64	4	1	0	0.22	0.0	0	5.5	18	340	M	M	6	138	26	340
6	66	42	54	-7	11	0	0.09	0.0	0	10.9	23	330	M	M	5	18	35	340
7	63	40	52	-9	13	0	0.00	0.0	0	8.6	22	340	M	M	0		29	330
8	58	39	49	-12	16	0	0.02	0.0	0	7.1	22	340	M	M	7	18	35	330
9	57	38	48	-13	17	0	T	0.0	0	10.9	25	330	M	M	1		31	320
10	68	32	50	-12	15	0	0.00	0.0	0	5.9	20	210	M	M	0		27	200
11	60	43	52	-10	13	0	T	0.0	0	13.0	28	330	M	M	2		37	340
12	63	38	51	-11	14	0	T	0.0	0	5.7	14	340	M	M	3		17	330
13	67	48	58	-4	7	0	T	0.0	0	4.0	13	170	M	M	8		16	170
14	77	49	63	0	2	0	0.00	0.0	0	7.7	20	180	M	M	3	8	26	180
15	79	55	67	4	0	2	0.00	0.0	0	8.1	18	180	M	M	0	8	24	180
16	82	51	67	4	0	2	0.00	0.0	0	2.4	14	170	M	M	0	1	19	160
17	80	53	67	4	0	2	0.00	0.0	0	4.5	14	160	M	M	3		21	160
18	68	61	65	1	0	0	2.17	0.0	0	3.8	15	180	M	M	9	13	23	160
19	65	52	59	-5	6	0	0.48	0.0	0	3.9	12	40	M	M	10	1	22	50
20	54	48	51	-13	14	0	2.15	0.0	0	1.3	8	60	M	M	10	1	14	30
21	69	51	60	-4	5	0	0.12	0.0	0	2.4	12	160	M	M	10	1	16	150
22	73	55	64	-1	1	0	0.17	0.0	0	2.3	12	320	M	M	6	1238	14	350
23	83	57	70	5	0	5	0.00	0.0	0	3.5	16	340	M	M	4	12	20	330
24	83	59	71	6	0	6	0.02	0.0	0	3.5	13	210	M	M	1	3	19	160
25	77	60	69	4	0	4	T	0.0	0	4.5	14	160	M	M	7	1	18	140
26	71	65	68	2	0	3	0.13	0.0	0	3.5	9	150	M	M	8	1	14	150
27	69	63	66	0	0	1	T	0.0	0	1.6	9	120	M	M	10	18	14	110
28	79	61	70	4	0	5	0.20	0.0	0	5.1	15	210	M	M	6	1	19	170
29	81	63	72	6	0	7	0.03	0.0	0	2.5	15	210	M	M	8	12	21	220
30	81	62	72	5	0	7	0.00	0.0	0	8.1	21	340	M	M	4	1	27	340
31	78	60	69	2	0	4	0.00	0.0	0	9.9	21	340	M	M	3		27	340
SM	2229	1600			148	54	5.80	0.0		182.7			M		141			
AV	71.9	51.6								5.9	FASTST		M	M	5	MAX(MPH)		
									MISC ---->		35	340					46	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: MAY
YEAR: 2020
LATITUDE: 35 25 N
LONGITUDE: 82 33 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 61.8
DPTR FM NORMAL: -1.3
HIGHEST: 85 ON 3
LOWEST: 32 ON 10

[PRECIPITATION DATA]

TOTAL FOR MONTH: 5.80
DPTR FM NORMAL: 2.14
GRTST 24HR 2.23 ON 18-19

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]

[WEATHER - DAYS WITH]

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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:   1    0.50 INCH OR MORE:   2
MIN  0 OR BELOW:   0    1.00 INCH OR MORE:   2

[HDD (BASE 65) ]
TOTAL THIS MO.   148    CLEAR  (SCALE 0-3)  13
DPTR FM NORMAL    39    PTCLDY (SCALE 4-7)  12
TOTAL FM JUL 1  3366    CLOUDY (SCALE 8-10)  6
DPTR FM NORMAL  -815

[CDD (BASE 65) ]
TOTAL THIS MO.    54
DPTR FM NORMAL     4    [PRESSURE DATA]
TOTAL FM JAN 1    68    HIGHEST SLP 30.34 ON 13
DPTR FM NORMAL    10    LOWEST  SLP 29.73 ON 19

[REMARKS]
#FINAL-05-20#

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CXUS52 KGSP 011031
CF6AVL
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

                                        STATION:   ASHEVILLE NC
                                        MONTH:     JUNE
                                        YEAR:      2020
                                        LATITUDE:   35 25 N
                                        LONGITUDE:  82 33 W
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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	52	64	-3	1	0	0.00	0.0	0	4.6	14	180	M	M	2		17	170
2	84	54	69	2	0	4	0.00	0.0	0	2.8	15	220	M	M	2		18	220
3	86	64	75	7	0	10	T	0.0	0	6.4	17	330	M	M	3	38	24	350
4	86	63	75	7	0	10	0.26	0.0	0	4.6	21	160	M	M	2	13	27	170
5	84	65	75	7	0	10	0.29	0.0	0	4.0	20	340	M	M	6	3	23	340
6	88	65	77	9	0	12	0.00	0.0	0	6.8	16	330	M	M	0		20	360
7	91	62	77	8	0	12	0.00	0.0	0	5.2	14	160	M	M	0		19	160
8	83	65	74	5	0	9	0.03	0.0	0	4.3	12	150	M	M	4	1	17	160
9	87	71	79	10	0	14	T	0.0	0	6.5	17	180	M	M	5	8	22	180
10	81	69	75	6	0	10	0.59	0.0	0	7.2	20	190	M	M	7	138	29	210
11	79	66	73	3	0	8	0.02	0.0	0	10.6	22	330	M	M	3	1	27	330
12	82	63	73	3	0	8	0.00	0.0	0	11.3	20	330	M	M	3		25	330
13	80	56	68	-2	0	3	0.00	0.0	0	2.0	10	160	M	M	5		14	130
14	75	57	66	-4	0	1	0.38	0.0	0	2.6	10	180	M	M	5	13	16	160
15	71	57	64	-6	1	0	0.00	0.0	0	3.7	10	120	M	M	9		17	130
16	60	56	58	-13	7	0	0.26	0.0	0	3.0	9	30	M	M	10	1	16	80
17	71	57	64	-7	1	0	T	0.0	0	6.8	18	330	M	M	10	1	23	330
18	73	60	67	-4	0	2	0.17	0.0	0	1.8	10	330	M	M	10	1	13	330
19	78	58	68	-3	0	3	0.02	0.0	0	2.7	17	340	M	M	3	13	23	340
20	84	58	71	-1	0	6	0.00	0.0	0	4.6	17	320	M	M	3	12	23	310
21	86	62	74	2	0	9	0.30	0.0	0	3.1	25	230	M	M	5	13	32	230
22	86	63	75	3	0	10	T	0.0	0	2.7	15	200	M	M	5	138	23	200
23	81	62	72	0	0	7	0.02	0.0	0	4.7	18	340	M	M	4	1	27	360
24	82	63	73	1	0	8	T	0.0	0	4.3	14	340	M	M	3		18	320
25	84	64	74	2	0	9	T	0.0	0	6.0	17	330	M	M	5		20	330
26	83	58	71	-1	0	6	T	0.0	0	2.6	14	210	M	M	3	8	17	200
27	79	65	72	-1	0	7	0.01	0.0	0	5.6	14	340	M	M	4	18	19	320

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28  88  63  76   3   0  11 0.00  0.0    0  5.7 21 320   M    M   2 38     29 320
29  86  67  77   4   0  12 0.05  0.0    0  7.6 14 340   M    M   3 18     21 330
30  82  69  76   3   0  11    T  0.0    0  5.9 13 340   M    M   4 38     15 330
================================================================================
SM 2436 1854        10 212  2.40  0.0    149.7          M      130
================================================================================
AV 81.2 61.8                                  5.0 FASTST   M    M   4    MAX(MPH)
                                  MISC ---->    25 230                  32 230
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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:     JUNE
                                          YEAR:      2020
                                          LATITUDE:   35 25 N
                                          LONGITUDE:  82 33 W

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

AVERAGE MONTHLY: 71.5   TOTAL FOR MONTH:   2.40    1 = FOG OR MIST
DPTR FM NORMAL:   1.0   DPTR FM NORMAL:   -2.25    2 = FOG REDUCING VISIBILITY
HIGHEST:    91 ON  7    GRTST 24HR  0.61 ON 10-11      TO 1/4 MILE OR LESS
LOWEST:     52 ON  1                               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:  13
MAX 90 OR ABOVE:   1    0.10 INCH OR MORE:   7
MIN 32 OR BELOW:   0    0.50 INCH OR MORE:   1
MIN  0 OR BELOW:   0    1.00 INCH OR MORE:   0

[HDD (BASE 65) ]
TOTAL THIS MO.    10    CLEAR  (SCALE 0-3)   9
DPTR FM NORMAL    -4    PTCLDY (SCALE 4-7)  17
TOTAL FM JUL 1  3376    CLOUDY (SCALE 8-10)  4
DPTR FM NORMAL  -816

[CDD (BASE 65) ]
TOTAL THIS MO.   212
DPTR FM NORMAL    35    [PRESSURE DATA]
TOTAL FM JAN 1   280    HIGHEST SLP 30.28 ON  1
DPTR FM NORMAL    45    LOWEST  SLP 29.79 ON 23

[REMARKS]
#FINAL-06-20#
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