Prepared by:
Douglas K. Miller

Undergraduate research students (UNC Asheville):
Meredith Avison, Jackson Coley, Daniel Fairchild, Michelle Hauser, Sarah Langille, Alice Monroe, Zachary Moss, Samuel Peterson, Taylor Ross, Josh Ward

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

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Status

Table 1: Gauge visits during the autumn 2021 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
5 Oct 2021*	3; 11; 4	Doug	DD, MN, CV, BR
8 Oct 2021	100T, 111, 112, 311	Doug, Meredith	DD, MN, CV, BR
9 Oct 2021	304, 307	Doug, Taylor, Josh	DD, MN, CV, BR
15 Oct 2021	101, 102, 103, 108	Doug, Zachary	DD, MN, CV, BR
16 Oct 2021	305, 309, 310	Doug, Jackson, Daniel F	DD, MN, CV, BR
22 Oct 2021	107, 109, 104	Doug, Michelle	DD, MN, CV, BR
23 Oct 2021	301, 302, 300	Doug, Meredith, Jackson	DD, MN, CV, BR
30 Oct 2021	3; 11; 106	Doug	DD, MN, CV, BR
31 Oct 2021	105, 110, 4	Doug, Alice	DD, MN, CV, BR
5 Nov 2021	2; 5; 8; 10	Doug, Sarah	DD, MN, CV, BR
6 Nov 2021	303s, 306, 308	Doug, Meredith, Samuel	DD, MN, CV, BR

*postponed due to heavy rainfall

Gauge visitation in support of the Duke Great Smoky Mountain Rain Gauge Network (GSMRGN) during the autumn 2021 occurred over ten days spanning a period of five weeks in October - November 2021. The primary purpose of the visits in the autumn 2021 was [1] to perform downloads of gauge tip observations since the previous gauge visits in the summer 2021, [2] to complete maintenance tasks, [3] to clear vegetation and tree limbs and, [4] to replace ALL data logger batteries in anticipation of cold winter weather, when lithium batteries respond with a drop in operating voltage. 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) to clear vegetation and tree limbs [CV in Table 1] and, (4) to replace ALL data logger batteries [BR in Table 1] in anticipation of cold winter weather, when lithium batteries respond with a drop in operating voltage. A specialized task was the replacement of four AA batteries of the T/RH sensor at the fire tower on Mount Sterling (near g310) to record air temperature during the cool season. 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. Five ML1 loggers showed a poor response using the TA command (g112, g107, g106, g110, and g306 [a new data logger replaced the old logger at g308]) and might require replacement during the spring 2022 visit. 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 branches, rhododendron, and mountain laurel within a five foot radius of the gauge using clippers or a saw. Task (4) was completed successfully in every data logger at each of the rain gauge locations. The data loggers at the five gauges listed above will need to be replaced in 2022 if the TA adjustments fail to improve between the fall 2021 visit and visits in the future.

The rain gauge and base of g005 was found knocked over (presumably by a bear) on 5 November 2021. The tip observations indicated that the second knock-over likely happened on 31 October 2021. The gauge was righted and adjustments to the logger and gauge level were made. Don E. had reset and releveled the gauge after finding it tipped over on 13 September 2021. A repeat of the knock-over by spring 2022 will force measures such as the installation of ammonium-filled balloons and/or a motion-activated alarm to discourage future bear interactions with the rain gauge. Ammonium-filled balloon installation will be considered at g110 where a motion-activated alarm was installed on 31 October 2021 if the gauge is again found knocked over during the spring 2022 visit. Underreported rain accumulation (low tip count) was found at g111 [8 October 2021], similar in behavior to what had been found earlier in the study at g106 and g109. The consistent low tip count, even after electronic contact cleaning in the summer 2021, suggested a problem with the switch, which was replaced during the 8 October 2021 visit. The time adjust at several locations having ML1 loggers was set to "off" [g112, g107, g106, g110, and g306] during the most recent visits as it is hoped the adjustment will self-correct during visits in the spring 2022, following the extended winter period. Overgrowth by a single briar branch at g107 was found during the autumn 2021 visit campaign.

No particularly difficult challenges were encountered during gauge visits in the autumn 2021, other than a persistent light rainfall during the visit to the Mt Sterling Ridgeline gauges (g305, g309, and g310) on 16 October 2021. Otherwise, the gauge network was functioning as smoothly as is possible. We continue to inquire with Mr. Edwin Warren, of Duke Power, on the possibility of gaining access to weather station observations taken near the Mount Sterling fire tower, next to g310 (~5,800 feet ASL). The weather observations will help discern the source of tips in the cool season; rain or melting snow. Phil Ferguson [Phil@thesellersagency.com] is the landowner on which g106 rests. Please contact him when visiting in the spring 2022.

Details of every gauge visit along with precipitation raw and CSV files can be found via Google Drive https://drive.google.com/file/d/1fvREo8yKwu_EMTBbkrg2GzBHI6WCNanK/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 July – September 2021 as observed at KAVL are highlighted in yellow in **Appendix A**. Of particular relevance is the reversal of precipitation abundance that occurred from the abundance of rainfall in August 2021, due primarily to the passage of the remnants of Fred (severe flooding observed in Cruso, NC near rain gauges g03 and g11), to the dearth of rainfall in September 2021.

Plans for the spring months of 2022

Table 2: Planned gauge visits during the spring 2022 campaign. 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/??/2022	3; 11	Doug, one student	DD, MN, CA, CV
3/??/2022	2; 5; 8	Doug, one student	DD, MN, CA, CV
3/??/2022	100T, 105, 104	Doug, one student	DD, MN, CA, CV
3/??/2022	300, 308	Doug, two students	DD, MN, CA, CV
4/??/2022	106, 10	Doug, one student	DD, MN, CA, CV
4/??/2022	304, 307	Doug, two students	DD, MN, CA, CV
4/??/2022	4, 108, 109	Doug, one student	DD, MN, CA, CV
4/??/2022	311, 110	Doug, one student	DD, MN, CA, CV
4/??/2022	111, 112, 107	Doug, one student	DD, MN, CA, CV
5/??/2022	303s, 306	Doug, two students	DD, MN, CA, CV
5/??/2022	101, 102, 103	Doug, two students	DD, MN, CA, CV
5/??/2022	305, 309, 310	Doug, two students	DD, MN, CA, CV
5/??/2022	301, 302	Doug, two students	DD, MN, CA, CV

Gauge visitation in support of the Duke GSMRGN during the spring 2022 will occur over at least thirteen days spanning March through mid-May 2022. The primary purpose of the visits will be to download precipitation observations that were made since the previous gauge visits in October - November 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], calibrate every rain gauge [last calibration in spring 2021, CA in Table 2], and clear vegetation (and tree branches) from overhanging gauges [CV in Table 2]. Calibrations are scheduled at **ALL** rain gauge locations during the spring season due to the increased availability of daylight hours (over autumn) and to a seasonal (March, April, May) minimum in precipitation observed in the Pigeon River Basin (WaF, February 2018).

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 2021-2022 academic year consists of Meredith Avison, Jackson Coley, Daniel Fairchild, Michelle Hauser, Sarah Langille, Alice Monroe, Zachary Moss, Samuel Peterson, Taylor Ross, Josh Ward. New undergraduate research students at UNC Asheville will be recruited as field technicians for the Duke GSMRGN project in the spring 2022. Meredith will be graduating in December 2021.

Table 3: The Duke Great Smoky Mountain Rain Gauge Network is currently (valid as of 15 November 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	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

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000
CXUS52 KGSP 011552
CF6AVL
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

                                      STATION:   ASHEVILLE NC
                                      MONTH:     JULY
                                      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  85  65  75   1   0  10 0.16    0.0    0  5.8 21 190   M    M   4 138    26 190
 2  80  64  72  -3   0   7 0.45    0.0    0  7.0 20 340   M    M   5 1      26 350
 3  77  59  68  -7   0   3 0.00    0.0    0  7.9 20 330   M    M   0        26 340
 4  82  53  68  -7   0   3 0.00    0.0    0  3.9 15 340   M    M   1        18 340
 5  85  59  72  -3   0   7 0.00    0.0    0  3.0 10 180   M    M   1 18     15 160
 6  86  60  73  -2   0   8 0.00    0.0    0  3.5 14 160   M    M   1 8      18 160
 7  82  63  73  -2   0   8    T    0.0    0  2.4 12 170   M    M   4 8      15 170
 8  83  68  76   1   0  11 0.18    0.0    0  5.3 20 330   M    M   6 1      23 340
 9  83  64  74  -1   0   9 0.24    0.0    0  4.4 14 340   M    M   3 1238   19 350
10  85  63  74  -1   0   9 0.52    0.0    0  3.7 15 230   M    M   2 138    20 220
11  85  65  75   0   0  10 0.02    0.0    0  5.6 18 200   M    M   6 123    22 200
12  84  64  74  -1   0   9 0.12    0.0    0  7.0 30 200   M    M   6 18     41 200
13  81  63  72  -3   0   7    T    0.0    0  6.2 17 200   M    M   5 8      29 180
14  82  66  74  -1   0   9 1.86    0.0    0  2.2 21 290   M    M   4 123    26 290
15  84  63  74  -1   0   9 0.14    0.0    0  3.9 15 300   M    M   6 12     19 300
16  87  63  75   0   0  10 0.00    0.0    0  4.5 13 190   M    M   2 12     16 210
17  86  67  77   2   0  12 0.31    0.0    0  2.5 17 210   M    M   3 138    24 210
18  83  67  75   0   0  10 0.81    0.0    0  3.5 18 320   M    M   7 1238   27 340
19  79  65  72  -3   0   7 0.06    0.0    0  3.7 14 180   M    M   9 1      17 190
20  77  64  71  -4   0   6 0.14    0.0    0  2.3  9 150   M    M   8 1      13 160
21  84  59  72  -3   0   7 0.00    0.0    0  6.1 15 330   M    M   0 18     20 340
22  85  59  72  -3   0   7 0.00    0.0    0  3.3 15 330   M    M   1 18     20 340
23  86  62  74  -1   0   9 0.23    0.0    0  2.3 14 220   M    M   4 138    16 210
24  86  68  77   2   0  12 0.00    0.0    0  4.3 15 180   M    M   6 1      18 180
25  87  66  77   2   0  12 0.00    0.0    0  4.7 17 180   M    M   4 1238   20 180
26  89  67  78   3   0  13 0.13    0.0    0  2.6 13 310   M    M   3 13     15 270
27  90  67  79   4   0  14 0.01    0.0    0  3.2 10  90   M    M   5 13     21 100
28  90  67  79   4   0  14    T    0.0    0  5.8 17 330   M    M   1 18     23 320
29  90  62  76   1   0  11 0.00    0.0    0  2.5 12 340   M    M   0 18     14 340
30  88  67  78   3   0  13    T    0.0    0  6.3 16 340   M    M   1 1      22 340
31  86  65  76   1   0  11 0.00    0.0    0  2.9 16 330   M    M   1 8      20 330
================================================================================
SM 2617 1974        0 287  5.38  0.0       132.3           M       109
```

7

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=============================================================================
AV 84.4 63.7                          4.3 FASTST   M   M   4    MAX(MPH)
                              MISC ---->   30 200                41 200
=============================================================================
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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:     JULY
                                YEAR:      2021
                                LATITUDE:  35 25 N
                                LONGITUDE: 82 33 W
```

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

AVERAGE MONTHLY: 74.0   TOTAL FOR MONTH: 5.38   1 = FOG OR MIST
DPTR FM NORMAL: -1.1   DPTR FM NORMAL: 0.71   2 = FOG REDUCING VISIBILITY
HIGHEST: 90 ON 29,28 GRTST 24HR 1.86 ON 14-14   TO 1/4 MILE OR LESS
LOWEST: 53 ON 4   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: 16
MAX 90 OR ABOVE: 3   0.10 INCH OR MORE: 13
MIN 32 OR BELOW: 0   0.50 INCH OR MORE: 3
MIN 0 OR BELOW: 0   1.00 INCH OR MORE: 1

[HDD (BASE 65)]
TOTAL THIS MO.   0   CLEAR (SCALE 0-3) 14
DPTR FM NORMAL   0   PTCLDY (SCALE 4-7) 16
TOTAL FM JUL 1   0   CLOUDY (SCALE 8-10) 1
DPTR FM NORMAL   0

[CDD (BASE 65)]
TOTAL THIS MO.   287
DPTR FM NORMAL   -26   [PRESSURE DATA]
TOTAL FM JAN 1   548   HIGHEST SLP 30.31 ON 13
DPTR FM NORMAL   -68   LOWEST SLP 29.80 ON 2

[REMARKS]
#FINAL-07-21#
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000
CXUS52 KGSP 011553
CF6AVL
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)


                                   STATION:   ASHEVILLE NC
                                   MONTH:     AUGUST
                                   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  84  67  76   1   0  11 0.01   0.0    0  7.2 20 320   M     M    3 8      28 340
 2  83  62  73  -2   0   8    T    0.0    0  4.5 13 340   M     M    3         17 320
 3  73  65  69  -6   0   4 0.23   0.0    0  2.4  9 120   M     M    8 1       15 110
 4  75  65  70  -5   0   5    T    0.0    0  2.4  8 180   M     M    9         11 220
 5  80  62  71  -4   0   6    T    0.0    0  1.8 12 140   M     M    6         17 130
 6  81  57  69  -6   0   4 0.00   0.0    0  2.3 10 160   M     M    3 18      15 180
 7  84  62  73  -2   0   8 0.02   0.0    0  5.3 23 320   M     M    5 38      28 320
 8  86  61  74  -1   0   9 0.00   0.0    0  4.7 10 320   M     M    4 1       15 310
 9  84  62  73  -2   0   8 0.28   0.0    0  3.1 16 220   M     M    3 13      21 220
10  90  66  78   3   0  13    T    0.0    0  2.6 16 330   M     M    2 1238   22 210
11  88  65  77   2   0  12    T    0.0    0  4.4 14 340   M     M    2 1238   19 340
12  89  67  78   4   0  13 0.00   0.0    0  4.4 15 330   M     M    2 138    18 340
13  89  64  77   3   0  12    T    0.0    0  2.0 15 190   M     M    2 38     20 180
14  89  65  77   3   0  12 1.37   0.0    0  3.5 14  30   M     M    3 13      23  80
15  80  66  73  -1   0   8 1.40   0.0    0  3.2 17 170   M     M    8 123    31 210
16  78  65  72  -2   0   7 2.03   0.0    0  2.4 14 150   M     M    8 13      23 140
17  72  67  70  -4   0   5 3.30   0.0    0  5.7 23 180   M     M   10 123    34 130
18  85  66  76   2   0  11 0.00   0.0    0  4.4 13 330   M     M    6 12      18 320
19  87  66  77   3   0  12 1.03   0.0    0  2.4 22 350   M     M    4 123    31 360
20  83  67  75   1   0  10 0.01   0.0    0  5.3 14 310   M     M    6 1       17 350
21  83  64  74   0   0   9 0.26   0.0    0  2.6 15 180   M     M    5 123    17 190
22  86  67  77   3   0  12 0.00   0.0    0  3.0  9 320   M     M    6 1       13 340
23  87  64  76   2   0  11 0.00   0.0    0  5.2 13 320   M     M    1         18 340
24  88  66  77   4   0  12 0.00   0.0    0  2.5  7 160   M     M    1 18      12 180
25  88  65  77   4   0  12    T    0.0    0  2.9 12 330   M     M    2 138    18  40
26  85  65  75   2   0  10 0.26   0.0    0  2.4 13  80   M     M    4 1238   21 100
27  86  66  76   3   0  11 0.00   0.0    0  3.1 12 170   M     M    5 12      16 160
28  87  67  77   4   0  12 0.00   0.0    0  2.7 10 140   M     M    4 12      15 130
29  88  65  77   4   0  12 0.00   0.0    0  2.6 13 160   M     M    1 18      17 160
30  87  62  75   3   0  10 0.00   0.0    0  4.2 12 180   M     M    1 8       15 320
31  79  68  74   2   0   9 0.75   0.0    0  8.1 17 160   M     M    7 1       28 160
================================================================================
SM 2604 2006         0 298 10.95  0.0      113.3           M         134
================================================================================
AV 84.0 64.7                           3.7 FASTST  M    M    4    MAX(MPH)
                              MISC ---->  # 23 320                 34 130
================================================================================
NOTES:
# LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2
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```
                              STATION:   ASHEVILLE NC
                              MONTH:     AUGUST
                              YEAR:      2021
                              LATITUDE:  35 25 N
                              LONGITUDE: 82 33 W
```

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

AVERAGE MONTHLY: 74.4   TOTAL FOR MONTH: 10.95   1 = FOG OR MIST
DPTR FM NORMAL: 0.4   DPTR FM NORMAL: 5.91   2 = FOG REDUCING VISIBILITY
HIGHEST: 90 ON 10   GRTST 24HR 3.40 ON 16-17   TO 1/4 MILE OR LESS
LOWEST: 57 ON 6   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: 10
MIN 32 OR BELOW: 0   0.50 INCH OR MORE: 6
MIN 0 OR BELOW: 0   1.00 INCH OR MORE: 5

[HDD (BASE 65)]
TOTAL THIS MO.   0   CLEAR (SCALE 0-3) 14
DPTR FM NORMAL   0   PTCLDY (SCALE 4-7) 13
TOTAL FM JUL 1   0   CLOUDY (SCALE 8-10) 4
DPTR FM NORMAL   0

[CDD (BASE 65)]
TOTAL THIS MO. 298
DPTR FM NORMAL   19   [PRESSURE DATA]
TOTAL FM JAN 1 846   HIGHEST SLP 30.24 ON 28
DPTR FM NORMAL -49   LOWEST SLP 29.61 ON 31

[REMARKS]
#FINAL-08-21#

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


                                    STATION:   ASHEVILLE NC
                                    MONTH:     SEPTEMBER
                                    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   79   66   73    1    0    8  0.77   0.0    0  7.5  22 340   M     M    7  1     26  350
 2   79   61   70   -2    0    5  0.00   0.0    0  7.1  16 320   M     M    1          22  340
 3   80   55   68   -4    0    3  0.00   0.0    0  2.7  12 340   M     M    3 128     17  340
 4   81   57   69   -2    0    4  0.00   0.0    0  2.5  10 160   M     M    4 128     15  320
 5   81   57   69   -2    0    4  0.00   0.0    0  3.1  10 340   M     M    3  12     15  330
 6   82   65   74    3    0    9     T   0.0    0  6.0  16 330   M     M    7  8      20  330
 7   79   62   71    0    0    6  0.00   0.0    0  4.5  13 180   M     M    6  1      17  160
 8   82   66   74    4    0    9  0.16   0.0    0  3.5  16 200   M     M    4 13      20  320
 9   76   58   67   -3    0    2  0.00   0.0    0  9.1  22 340   M     M    3          29  340
10   75   52   64   -6    1    0  0.00   0.0    0  4.2  15 330   M     M    1 18      20  330
11   78   51   65   -5    0    0  0.00   0.0    0  2.3  10 170   M     M    2 128     13  160
12   82   54   68   -2    0    3  0.00   0.0    0  3.8  12 190   M     M    1 18      16  330
13   83   61   72    3    0    7  0.00   0.0    0  4.6  17 320   M     M    0          23  350
14   84   60   72    3    0    7  0.00   0.0    0  2.9  12 220   M     M    4 12      15   20
15   80   60   70    1    0    5  0.18   0.0    0  3.3  12 200   M     M    5 128     15  200
16   74   61   68    0    0    3  0.07   0.0    0  1.7   7 170   M     M   10  1      10  110
17   75   64   70    2    0    5  0.16   0.0    0  1.4   9 170   M     M    8  1      11  180
18   80   63   72    4    0    7  0.00   0.0    0  2.8   9 120   M     M    4  1      13  120
19   79   65   72    4    0    7  0.24   0.0    0  2.2  13 220   M     M    6  1      15  170
20   73   66   70    3    0    5  0.19   0.0    0  3.9  12 150   M     M    8  1      18  130
21   70   63   67    0    0    2  0.32   0.0    0  2.4   9 130   M     M   10  1      14  140
22   74   53   64   -2    1    0  0.83   0.0    0  6.9  22 340   M     M    7  1      32  360
23   66   47   57   -9    8    0  0.00   0.0    0 10.6  24 340   M     M    3          35  340
24   71   45   58   -8    7    0     T   0.0    0  3.0  13 330   M     M    0  8      17  330
25   70   45   58   -8    7    0  0.00   0.0    0  4.3  21 330   M     M    3 128     26  330
26   73   46   60   -5    5    0  0.00   0.0    0  3.8  14 330   M     M    1 128     19  330
27   79   47   63   -2    2    0  0.00   0.0    0  3.4  14 330   M     M    0          19  320
28   80   52   66    2    0    1  0.00   0.0    0  5.9  21 330   M     M    1 18      26  330
29   81   55   68    4    0    3  0.00   0.0    0  4.8  12 340   M     M    0  8      15  330
30   83   56   70    6    0    5  0.00   0.0    0  1.2   7 360   M     M    0 18      10   10
================================================================================
SM 2329 1713            31  110  2.92   0.0        125.4            M         112
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AV 77.6 57.1                                  4.2 FASTST  M     M    4    MAX(MPH)
                                    MISC ---->   24 340                     35 340
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NOTES:
# LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

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                       LATITUDE:  35 25 N
                       LONGITUDE: 82 33 W


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

AVERAGE MONTHLY: 67.4    TOTAL FOR MONTH:   2.92   1 = FOG OR MIST
DPTR FM NORMAL:  -0.9    DPTR FM NORMAL:   -1.21   2 = FOG REDUCING VISIBILITY
HIGHEST:    84 ON 14     GRTST 24HR  1.49 ON 31- 1     TO 1/4 MILE OR LESS
LOWEST:     45 ON 25,24                             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:    9
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:    0

[HDD (BASE 65) ]
TOTAL THIS MO.   31      CLEAR  (SCALE 0-3)  14
DPTR FM NORMAL   -3      PTCLDY (SCALE 4-7)  13
TOTAL FM JUL 1   31      CLOUDY (SCALE 8-10)  3
DPTR FM NORMAL   -1

[CDD (BASE 65) ]
TOTAL THIS MO.   110
DPTR FM NORMAL   -23     [PRESSURE DATA]
TOTAL FM JAN 1   956     HIGHEST SLP 30.33 ON 12
DPTR FM NORMAL   -72     LOWEST  SLP 29.58 ON  1

[REMARKS]
#FINAL-09-21#
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