



NORTHEASTERN STORM BUSTER

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Evan L. Heller, Editor

Steve DiRienzo, Publisher

Ingrid Amberger, Webmistress

IN THIS ISSUE

FEATURES

1 SPECIAL FEATURE: "Countytop" Weather Adventures (A StormBuster Miniseries)

PART 2: Climbing the Catskill High Peaks

The trek continues.

/By Brian J. Frugis

3 Education And Your National Weather Service

Great information for the classroom.

/By Brian Montgomery

4 Summer 2010: Hotter And Drier Than Normal

The numbers are in.

/By Evan. L. Heller

DEPARTMENTS

5 WCM Words

6 From the Editor's Desk

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SKYWARN FALL SESSIONS

Mid-October thru mid-November

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"COUNTYTOP" WEATHER ADVENTURES

A STORM BUSTER MINISERIES

Brian J. Frugis

Meteorologist, NWS Albany

PART 2

CLIMBING THE CATSKILL HIGH PEAKS

As detailed in the previous issue of *Northeastern StormBuster*, I am attempting to summit the highest accessible mountain peaks in each county within the National Weather Service Albany Forecast Area. While the first installment of our mini-series dealt with the Taconic Range, this second one focuses on the Catskill Mountains of eastern New York, and the weather encountered in hiking these mighty mountains.

The Catskills are one of the most well-known mountain ranges in all of the eastern United States. The Catskill State Park, a unique 700,000 acre area of both public and private land, contains over 300 miles of hiking trails, extending across four counties. In the Albany Forecast Area, the Park encompasses much of the western halves of both Ulster and Greene Counties, although the true Catskill Mountain range actually extends into portions of Schoharie and Albany Counties as well. Most of the highest peaks of the Catskill Mountains are in the Albany Forecast Area, with the highest peak being 4,180' Slide Mountain, situated in west-central Ulster County. The highest mountain in Greene County is the Catskill's 2nd highest peak, 4,040' Hunter Mountain.

Accompanied by fellow NWS Albany Meteorologist, Hugh W. Johnson IV, I hiked Hunter Mountain on a fair weather day. There are several approaches from Hunter Mountain, which vary in difficulty and length. While the fastest approach is the

Becker Hollow Trail from the east, with only a 2.0 mile hike to reach the summit, this requires a steep ascent, with a 2,270-foot elevation gain from State Route 214 in Stony Clove Notch. Wanting to enjoy the day and not suffer needlessly, we decided on a much more gradual approach...from the west via the West Kill Valley, taking the blue-blazed Spruceton Trail from a large parking lot at the end of Spruceton Road (Greene County Road 6). This trail was a former horse trail, and is very wide and gradual to start; a great way to start a large hike. After a mile and a half or so, the trail begins to steepen and narrow somewhat, making for a tougher climb. Eventually, this trail meets up with a short one that can be used to reach the chairlift from the Hunter Mountain Ski Area. At this point, the forest becomes more boreal, with softwoods dominating the landscape. The trail was much muddier at this point during our hike, which necessitated a bit more careful walking. Finally, 3.4 miles and 1,957 vertical feet from the trailhead, we reached the summit of Hunter Mountain.

The Hunter Mountain summit is special, as it features a fire tower. Prior to the frequent use of helicopters, airplanes and satellite imagery, fire towers were important observation points for locating forest fires. Nowadays, they are simply an attraction for hikers, providing 360-degree views. The fire tower on Hunter Mountain is a 60-foot steel structure, fully open and free to the visiting public. It is the highest in all of New York State, and the second-highest in the entire Northeast (4,088' Mount Bigelow in Maine has the highest fire tower in the Northeast). As the NWS Albany Fire Weather Focal Point, Hugh appreciated the view from the tower. The Taconics and Berkshires were visible to the east, and many of the Catskill's famous peaks were clearly in view to the south. To the north, the nearby Blackhead Range was in full view, as were other sections of the dramatic Catskill Escarpment.

On the day we hiked Hunter, the weather was pleasant, with a partly cloudy sky of puffy cumulus. Cumulus clouds, such as the ones pictured in Figure 1, are common across mountain areas. On many afternoons, the higher terrain is the first to experience the formation of these clouds. This is because valleys and mountains usually heat up at different rates, with the mountains areas typically warming faster than the valley. As a result, the air rushes from the cooler area to the warmer area. This effect causes the air to flow up the terrain, creating a mountain breeze. This is a similar process to sea breezes that occur in coastal areas. This mountain breeze helps lift, cool and condense the air,

forcing clouds to develop. Also, westerly winds are quite common across our area. As the westerly winds encounter the windward side of the Catskill Mountains, the air is forced up the slope. If enough instability is present, these clouds can exhibit substantial vertical growth, and produce precipitation, even thunderstorms. Luckily, the day we hiked featured little instability, so the clouds that were produced were relatively flat, keeping us dry for the remainder of our hike.

Instead of returning the way we came, Hugh and I headed south along the Hunter Mountain Summit Trail to a section of the Devil's Path, a well-known rugged and long trail that crosses several of the Catskill High Peaks to the east of Hunter Mountain. We picked up this trail for a brief time and headed back west, eventually heading north on the Diamond Notch Trail. By the time we reached Spruceton Road again, we had hiked a loop totaling 7.9 miles.



Figure 1: The view, looking north, from the Fire Tower on the top of Hunter Mountain. Notice the flat cumulus clouds that have developed over the high terrain.

During the late Spring of 2010, I decided to finally conquer Slide Mountain, the highest mountain in the Catskills. I had been looking forward to this hike, as I would finally be hiking the tallest mountain in our County Warning Area. The most common path on which to hike Slide Mountain is an approach from the western side, for an easy 2.2 mile trip to the summit. With the trailhead being located at 2,400 feet, it is an ascent of only 1,780 feet along the Burroughs Range Trail. Shortly after you begin the hike, you cross a tributary of the west branch of the Neversink River. Since the weather had been rather dry, the creek on this

day amounted to not much more than a trickle. However, many guide books have mentioned that this can be a rather swift-moving waterway, especially during the spring snowmelt season. The trail is never overly strenuous, although there a few brief sections that are somewhat steep. After arriving close to the 4,000-foot mark, the trees are noticeably more of the spruce and pine variety, as opposed to the hardwood birch and maples of the lower elevations. Finally, at a spot close to the summit, there is a wide-open view on a north-facing ledge. Although my Catskill guidebook mentioned that the Kingston-Rhinecliff Bridge could be seen to the east-northeast, I was not able to locate it. However, many of the Catskill High Peaks of Greene County were visible to the north, including nearby Giant Ledge and the Panther Mountains, Hunter Mountain and the other mountains of the Devil's Path, and the Blackhead Range. It is said that 33 of the other 34 Catskill High Peaks can be viewed from somewhere along the summit ridge of Slide. It is interesting to note that at the highest point of the mountain, it's simply a rocky clearing offering no real view, the best view being just to the west, at the Rocky Ledge viewpoint.

On the day I hiked Slide, there were quite a lot of cumulus clouds around, even more than on the day I hiked Hunter. However, during this day, there was some more atmospheric instability present, which allowed for greater vertical growth of the clouds. As a result, some precipitation fell. In Figure 2, from the rocky viewpoint near the summit, you can see rain shafts visible to the north. Some of the precipitation wasn't quite reaching the ground. Meteorologists call this 'virga'. However, rainfall was reported across northern Ulster and Greene Counties during this time. A few of the showers even produced some small hail, which was due to the very cold air aloft that was present on this day, as an upper-level low pressure area was located just to the north of the region. Luckily, I didn't receive any rain or hail during my hike, but was able to safely observe the precipitation falling to my north.

The upcoming fall season should provide me with ample opportunity to hike more of the county high peaks. I'm hoping to visit some of southern Vermont's highest peaks, including Stratton Mountain and Mount Equinox. Future *Northeastern StormBuster* issues will detail some of the County High Peaks in the northern half of the County Warning Area, including some of the best hikes in the Adirondacks, with more stories and photos. Until then, try some of these hikes, but be sure to check the weather before you head out!



Figure 2: Looking north-northwest from a rocky ledge near the top of Slide Mountain. Notice the rain shafts and virga in the distance. □

EDUCATION AND YOUR NATIONAL WEATHER SERVICE

*Brian Montgomery
Senior Meteorologist, NWS Albany*

It was an active and warm summer across eastern New York and adjacent western New England, with severe weather, flooding, and temperatures climbing above 90°F. As we settle into another fall season, your NOAA National Weather Service is hard at work...providing in-house training seminars and performing careful reviews of previous weather events, ensuring the best possible forecast is available to you. Utilizing the best available technology, research and knowledge, 24 hours a day, we will be here providing you with the information you need to help prepare for what lies ahead.

Perhaps you're looking to bring some of this technology into your classrooms, or you'd like to visit our forecast facility as part of a school trip. We have a team of outreach meteorologists available to give presentations at your school during normal business hours. To schedule one, or to inquire about office visits, please contact our Warning Coordination Meteorologist, Mr. Stephen DiRienzo (Stephen.Dirienzo@noaa.gov), or schedule online at:

<http://www.erh.noaa.gov/aly/Outreach/Request.htm>. We recommend contacting us early, and providing us with several dates, for flexibility in planning. If you will be

visiting our facility...depending on your group size, several chaperones may be required. Due to heightened security, we will require an advance list of adult chaperone names, necessary for the purpose of showing proof of identification on your day of arrival.

Perhaps you wish to get a head start on weather education. Recently, our Owlle SKYWARN book was overhauled with fresh information that includes what to do if a tornado, a hurricane, a flood, lightning or a winter storm were to affect you. If you'd like to download your own free copy, please visit:

<http://www.nws.noaa.gov/om/brochures/OwlieSkywarnBrochure.pdf>.

Several additional online resources are available to educators and students. Below are 10 web resources you may wish to bookmark:

1. FEMA Kids <http://www.fema.gov/kids/>
2. NOAA Education and Science Resources <http://www.education.noaa.gov/>
3. Jetstream – Online School of Weather <http://www.srh.noaa.gov/jetstream/>
4. NOAA Climate Services <http://www.climate.gov>
5. Numerous brochures and informational tools from the Office of Climate, Water and Weather Services <http://www.weather.gov/om/>
6. SciJinks (NOAA/NASA collaboration) <http://scijinks.jpl.nasa.gov/>
7. American Red Cross Masters of Disasters <http://www.redcross.org/disaster/masters>
8. The Weather Channel Kids <http://www.theweatherchannelkids.com/>
9. NOAA/NASA Sky Watcher Cloud Chart <http://www.weather.gov/os/brochures/cloudchart.pdf>
10. MetEd (Meteorology Education and Training) <http://www.met.ed.ucar.edu/>

SKYWARN

FALL SESSIONS

COMING SOON!

<http://www.erh.noaa.gov/er/aly/>

SUMMER 2010: HOTTER AND DRIER THAN NORMAL

*Evan. L. Heller
Climatologist, NWS Albany*

The summer of 2010 was a rather warm one. All three months were about one to four degrees above normal...with July being the most above. The month saw almost all of the temperature records established during the season (table 3b), including a top 30 setting within the 200 All-Time Hottest Months chart. There was a significant heat wave, from the 5th to the 9th, where the high temperature each day was in the 90s. There were two consecutive days of 95°+ highs in the middle of this stretch. The 6th was especially notable for being one of our hottest days in history. The mean temperature for the day was 86.0°. Only 14 days have been hotter! Despite this heat, July 2010 was not one of our 10 Hottest Julys, and the thermometer actually fell one degree shy of tying the record high for the 6th. However, both the record high minimum and the record high mean for the date were tied. The highest minimum temperature for the season, 76°, was also recorded on the 6th.

The only other records were two temperature records for August (Table 3c). This month also cracked the Top 200 All-Time Hottest Months chart, but had a far less impressive showing than July, fitting in at #165. August also ended with the start of a mini heat wave, which ended September 2nd, two days into climatological fall. Climate-wise, June was the more subdued month in the group, and because of this, there were no climate records for the summer season as a whole. Factoring in just the first two months of summer, precipitation was pretty close to normal (Table 1). August showed the greatest deficit from normal, just shy of two inches, and this made our seasonal total nearly 2 inches shy of the seasonal normal. There were only 10 days of measureable precipitation in August, and only one day with a half inch or more (Table 2).

Looking at the cooler side of the spectrum, June 9th was the coolest day of the season. The mean temperature was 51.5°, with a high of just 58°, and a low of 45°. As far as Albany proper goes, June was the most active weather month, with 8 thunderstorm days. August, with its dry pattern, recorded only 3 (Tables 4a-c). The peak wind for the season, 44 mph, was recorded on one of the thunderstorm days, the 24th of June, but it

was not the windiest day, overall. That occurred on the 19th of June. All the months averaged a little less windy than normal. July was the sunniest month of the season, with 26 clear or partly cloudy days. Dense fog dates during the season were scarce, with a quarter mile or less being recorded at Albany International Airport on only June 14th and 28th.

STATS

	JUN	JUL	AUG	SEASON
Avg. High/Dep. From Norm.	77.4°/-0.1°	85.5°/+3.3°	81.8°/+2.1°	81.6°/+1.8°
Avg. Low/Dep. From Norm.	57.8°/+2.8°	64.3°/+4.3°	62.1°/+3.8°	61.4°/+3.6°
Mean/ Dep. From Norm.	67.6°/+1.3°	74.9°/+3.8°	72.0°/+3.0°	71.5°/+2.7°
High Daily Mean/date	77.5°/20 th & 28 th	86.0°/6 th	82.5°/4 th	
Low Daily Mean/date	51.5°/9 th	59.5°/1 st	62.5°/21 st	
Highest reading/date	87°/24 th	96°/6 th	92°/31 st	
Lowest reading/date	45°/9 th	48°/2 nd	49°/28 th	
Lowest Max reading/date	58°/9 th	70°/1 st	67°/23 rd	
Highest Min reading/date	70°/28 th	76°/6 th	74°/4 th	
Ttl. Precip./Dep. Fm. Norm.	4.69"/+0.95"	2.88"/-0.62"	1.69"/-1.99"	9.26"/-1.66"
Ttl. Snowfall/Dep. Fm. Norm.	0"/-	0"/-	0"/-	0"/-
Maximum Precip./date	1.24"/6 th	0.90"/23 rd	0.73"/22 nd	
Maximum Snowfall/date	0"/-	0"/-	0"/-	

Table 1

NORMALS, OBSERVED DAYS & DATES

	JUN	JUL	AUG	SEASON
NORMALS				
High	77.5°	82.2°	79.7°	79.8°
Low	55.0°	60.0°	58.3°	57.8°
Mean	66.3°	71.1°	69.0°	68.8°
Precip	3.74"	3.50"	3.68"	10.92"
Snow	0.0"	0.0"	0.0"	0.0"
OBS. TEMP. DAYS				
High 90° or above	0	8	3	11/92
Low 70° or above	1	9	4	14/92
High 32° or below	0	0	0	0/92
Low 32° or below	0	0	0	0/92
Low 0° or below	0	0	0	0/92
OBS. PRECIP. DAYS				
Days T+	20	16	14	50/92/54%
Days 0.01+	16	8	10	34/92/37%
Days 0.10+	9	5	5	19/92/21%
Days 0.25+	7	5	2	14/92/15%
Days 0.50+	2	4	1	7/92/8%
Days 1"+	2	0	0	2/92/2%
PRECIP. & SNOW DATES				
1.00"+ value/date	1.24"/6 th	-	-	
	1.02"/12 th	-	-	

Table 2

RECORDS

ELEMENT	JUNE	
NONE	-	-

Table 3a

ELEMENT	JULY	
High Minimum Temperature/Date/Previous Record/Year	76° (tie)/6 th	76°/1911
High Mean Temperature/Date/Previous Record/Year	86.0° (tie)/6 th	86.0°/1911
Top 200 All-Time Hottest Months Value/Rank/Remarks	74.9°/#28	-
Heat Wave (3 or more cons. days with high temp. of 90°+)	5 th thru 9 th	5-day stretch
Notable Hot Day (Mean Temperature 84.5°+)	86.0°/6 th	-
95+ Degree Date	96°/6 th	-
95+ Degree Date	95°/7 th	-

Table 3b

ELEMENT	AUGUST	
Top 200 All-Time Hottest Months Value/Rank/Remarks	72.0°/#165	13-way tie
Heat Wave (3 or more cons. days with high temp. of 90°+)	31 st thru Sep. 2 nd	3-day stretch

Table 3c

ELEMENT	SUMMER	
NONE	-	-

Table 3d

MISCELLANEOUS

JUNE

Avg. wind speed/Dep. Fm. Norm.	6.5 mph/-1.1 mph
Peak wind/direction/date	44 mph/WNW/24 th
Windiest day avg. value/date	10.4 mph/19 th
Calmmest day avg. value/date	2.2 mph/4 th
# Clear days	3
# Partly Cloudy days	19
# Cloudy days	8
Dense fog dates (code 2)	14 th & 28 th
Thunder dates (code 3)	1 st , 3 rd , 4 th , 5 th , 6 th , 12 th , 20 th & 24 th
Sleet dates (code 4)	-
Hail dates (code 5)	-
Freezing rain dates (code 6)	-

Table 4a

JULY

Avg. wind speed/Dep. Fm Norm.	6.1 mph/-0.9 mph
Peak wind/direction/date	37 mph/WNW/21 st
Windiest day avg. value/date	11.8 mph/9 th
Calmmest day avg. value/date	2.2 mph/20 th
# Clear days	6
# Partly Cloudy days	20
# Cloudy days	5
Dense fog dates (code 2)	-
Thunder dates (code 3)	17 th , 18 th , 21 st & 24 th
Sleet dates (code 4)	-
Hail dates (code 5)	-
Freezing rain dates (code 6)	-

Table 4b

AUGUST

Avg. wind speed/Dep. Fm Norm.	6.0 mph/-0.3 mph
Peak wind/direction/date	39 mph/WNW/6 th
Windiest day avg. value/date	12.0 mph/15 th
Calmmest day avg. value/date	2.8 mph/28 th
# Clear days	5
# Partly Cloudy days	16
# Cloudy days	9
Dense fog dates (code 2)	-
Thunder dates (code 3)	3 rd , 16 th & 19 th
Sleet dates (code 4)	-
Hail dates (code 5)	-
Freezing rain dates (code 6)	-

Table 4c

WCM Words

Steve DiRienzo

Warning Coordination Meteorologist, NWS Albany

Although this is my first "WCM Words", I am not new to the Albany Forecast Area. Many of you remember me as the Senior Service Hydrologist. Effective July 19, 2010, I was named the new Warning Coordination Meteorologist at the Albany National Weather Service Office, so, I'll be staying right here. For the foreseeable future, my words will occupy this

space. I also look forward to contributing articles from time-to-time.

As summer wanes and fall begins, we have to keep alert for late-season tropical activity. Although we have passed the normal peak in the Atlantic Basin hurricane season, history has shown that late-season tropical cyclones can cause flooding and wind problems for the Northeast, even into early November. Hopefully, the remainder of 2010's tropical cyclones will miss the area.

If you have comments on StormBuster, or any of the operations of the National Weather Service, please let me know at Stephen.Dirienzo@noaa.gov. □



From the Editor's Desk

With this installment, I'd like to welcome Steve DiRienzo to our team as Northeastern StormBuster's new Publisher. And, with Steve being NWS Albany's new Warning Coordination Meteorologist, he now takes over the 'NWS Words' segment from former WCM Ray O'Keefe, who recently became the office's new Meteorologist In Charge.

Our opening article is a continuation of *Northeastern StormBuster's* first-ever mini-series: "'Countytop' Weather Adventures". This time, Brian Frugis takes his travels into the high peaks of the Catskills. This will be an informative treat for hiking enthusiasts and 'weather weenies' alike. Next up, Brian Montgomery provides very helpful educational web links ideal for classroom use. Our final feature is a wrap-up of Albany's summer climate, provided by yours truly.

We hope you enjoy this issue along with the changes that autumn holds in store. We look forward to offering up our winter issue in just a few short months. □



Fall color in the Adirondacks



Autumn setting in New York City's Central Park



New York State apple orchard rows in early fall