NORTHEASTERN STORM BUSTER

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Evan L. Heller, Editor
Raymond O'Keefe, Publisher
Ingrid Amberger, Webmaster

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FEATURES

DEPARTMENTS

THE 2000s: OUR WETTEST DECADE ON RECORD

Hugh W. Johnson IV
Meteorologist, NWS Albany

Although the decade will not be over until January 1 2010, officially here in Albany, we have endured our wettest decade on record. Through December 15th, we have accumulated over 430.4" of precipitation this past decade, averaging 43.04" per year. This already squeaks by our previous wettest decade, the 1870s, which had an average of 43.01" per year. The 1840s was close behind that, with an average of 42.22" per annum. The 30-year normal precipitation total (based on 1971-2000 data) for one year is 38.60". Nine of the 10 years of the past decade were above normal. 2008 was the wettest year, with 47.79", and 2005 was close behind, with 47.72". It is ironic, however, that the precipitation total in 2001 was only 28.59", the driest year since 1965! Our driest decade on record was 1910-19, with an average of 31.47" per year, closely followed by the 1960s, with an average of 31.75" per annum.

Taking a look at each of the 12 months of the 2000s uncovers another interesting statistic. Only four months from the past decade had a large anomaly from the 30-year norm for precipitation. Those months were June, July, October and, to a lesser extent, December. The average precipitation for June was 4.73", just about an inch above the normal of 3.74". Despite one of the driest July's on record being in 2002, with under an inch recorded, the 10-year July average was 5.50", two inches above the 30-year normal! October's decadal average was just over an inch beyond the 3.23" 30-year normal value, with the last five years being well above normal. December averaged 3.52", compared to the 30-year normal of 2.76".

The wettest June of the decade was 2006, with a total of 8.74" of precipitation. Torrential rains with much higher rainfall amounts just to the west of Albany produced a flood of record along sections of the Mohawk River. The wettest July (and month, overall) of the past decade was this past year, with 9.91", and it was also the wettest July in well over a century. Record flash flooding took place in Columbia County on the 29th. Nine inches of rain fell in October 2005, with flooding noted across most of our County Warning Area several times during the month. There were many other significant flood events this past decade, more so than in any other decade of recent memory. Another memorable flood took place in early April 2005, when combined snowmelt and copious rainfall produced a flood of near record in the Esopus Basin. The wettest day of the decade belongs to June 6th of 2000, when 3.30" fell, smashing the old daily record for that date. Only a month later, 3.23" fell on July 15th, for a close second, and a daily record for that date.

Most of the months (excluding June, July, October and December) averaged close to normal precipitation during the past 10 years. February actually averaged a little below normal…only 1.94", compared to the normal of 2.27". While July 2005 and 2007 were very wet at Albany International Airport, almost all of the rainfall came with scattered thunderstorms that missed a lot of other areas nearby. The Mid Hudson Valley was very dry during July 2005, and the Mohawk Valley was parched in July of 2007.

With an overall wet decade, how did we fare with snowfall in the 2000s? Ironically, when one averages our seasonal snowfall over the past decade thus far, the result is just slightly more than the 30-year normal of 62.7". Could this wet decade be a reflection of significant climate change, or are we just in a wet cycle? Only time will tell! □

FALL 2009: NO MEASURABLE SNOW

Evan. L. Heller
Climatologist, NWS Albany

The Fall of 2009 was an interesting season, indeed. This year marks the first year since the beginning of Albany records for snowfall that measurable snowfall did not occur by the end of November. In fact, it is the only year to not only not have measured for snowfall in November, it is the only year to not have even traced (Table 1). Despite this fact, the season's only record was for daily snowfall. Yes…snowfall! When flurries fell over Albany totaling just a trace on October 16th (Table 3b), it became the first time since at least before 1885 that snow fell on this date. Although it was only a trace, this officially makes October 2009 snowier than November 2009 in Albany. This leaves only four dates in October that have never had a trace of snow, the latest of these now being October 14th. And other than the December 5th first snowfall of the season of 3.0" being the latest first measurable snowfall since official Albany records, there were no other climatological records of any kind.

If it weren't for November, the season would've ended up being slightly below normal for temperature. Instead, it wound up being about a degree higher, as November was slightly more than 4 degrees above normal (Table 1). However, there were no new records…no dailies, Top 10s or Top 100s, monthly or seasonal. The last reading of 80 degrees or more was recorded on September 27th, the first freeze, on October 12th. In one sense, November was milder than October, as the values for the low mean and low maximum temperature dates in November were slightly higher than those of the previous month.

Measurable rainfall was on the light side. The 8.06" total was almost 2 inches below normal. October was almost an inch above normal, but both September and November were well below (Table 1). Despite this, both September and November each produced a day with more than an inch of precipitation (in liquid form). A rainfall total of 1.10" on September 27th (Table 2) represented a whopping 64% of the total precipitation for the entire month. Two more dates with an inch or more of precipitation occurred in October.

All three months of the season were below normal for average wind speed, each by around 2 mph or so. November 28th was the windiest day of the season (Tables 4a-c). With November known as being one of our cloudiest months, the 24 clear or partly cloudy days out of 30 was very impressive. There's no doubt this assisted in making November as mild as it was.

Summarizing the Fall of '09, temperatures were slightly above normal, precipitation, below, and snowfall, way below.

STATS

	SEP	OCT	NOV	SEASON
Avg. High/Dep. From Norm.	70.6°/-0.7°	56.5°/-3.2°	52.3°/+4.8°	59.8°/+0.3°
Avg. Low/Dep. From Norm.	50.2°/+0.3°	39.4°/+0.6°	34.4°/+3.6°	41.3°/+1.5°
Mean/ Dep. From Norm.	60.4°/-0.2°	48.0°/-1.3°	43.3°/+4.1°	50.6°/+0.9°
High Daily Mean/date	73.0°/23rd	61.0°/4th	55.0°/15th	
Low Daily Mean/date	48.5°/30th	35.0°/15th	36.0°/18th & 23rd	
Highest reading/date	80°/4th & 23rd	74°/22nd	68°/9th	
Lowest reading/date	37°/26th	24°/19th	23°/7th & 18th	
Lowest Max reading/date	54°/30th	42°/15th	44°/27th	
Highest Min reading/date	66°/23rd	53°/4th	49°/15th	
Ttl. Precip./Dep Fm. Norm.	1.73"/-1.58"	4.16"/+0.93"	2.17"/-1.14"	8.06"/-1.79"
Ttl. Snowfall/Dep. Fm.Norm.	0.0"/±0	Trace/-0.2"	0.0"/-5.1"	Trace/-5.3"
Maximum Precip/date	1.10"/27th	1.62"/24th	1.05"/14th	
Maximum Snowfall/date	0.0"	Trace/16th	0.0"	

Table 1

NORMALS, OBSERVED DAYS & DATES

	SEP	OCT	NOV	SEASON
High	71.3°	59.7°	47.5°	59.5°
Low	49.9°	38.8°	30.8°	39.8°
Mean	60.6°	49.3°	39.2°	49.7°
Precip	3.31"	3.23"	3.31"	9.85"
Snow	0.0"	0.2"	5.1"	5.3"
OBS. TEMP. DAYS 2009				
High 90º or above	0	0	0	0/91
Low 70º or above	0	0	0	0/91
High 32º or below	0	0	0	0/91
Low 32º or below	0	9	14	23/91
Low 0º or below	0	0	0	0/91
OBS. PRECIP. DAYS 2009				
Days T+	9	16	11	36/91/40%
Days 0.01+	7	13	8	28/91/31%
Days 0.10+	3	6	2	11/91/12%
Days 0.25+	2	4	2	8/91/9%
Days 0.50+	1	2	2	5/91/5%
Days 1"+	1	2	1	4/91/4%
PRECIP. & SNOW DATES				
1.00"+ value/date	1.10"/27th	1.62"/24th	1.05"/14th	
1.00"+ value/date	-	1.27"/28th	-	

Table 2

RECORDS

ELEMENT	SEPTEMBER			
	1st		2nd	
NONE	/	/	/	/

Table 3a

ELEMENT	OCTOBER			
	1st		2nd	
Snowfall/Date|Prev Rec./Yr.	T/16th	None previous	2.42"/31st	1.29"/1939

Table 3b

ELEMENT	NOVEMBER	
	1st	2nd
NONE	-	-

Table 3c

ELEMENT	SEASON		
	1st		2nd
NONE	/	/	

Table 3d

MISCELLANEOUS

SEPTEMBER

Avg. wind speed/Dep. Fm Norm.	5.1 mph/-1.7 mph
Peak wind/direction/date	22 mph/S/28th
Windiest day avg. value/date	10.4 mph/30th
Calmest day avg. value/date	0.6 mph/2nd & 3rd
# clear days	14
# partly cloudy days	13
# cloudy days	3
Dense fog dates (code 2)	4th, 8th, 10th, 11th, 20th, 21st & 26th
Thunder dates (code 3)	-
Sleet dates (code 4)	-
Hail dates (code 5)	-
Freezing rain dates (code 6)	-

Table 4a

OCTOBER

Avg. wind speed/Dep. Fm Norm.	5.9 mph/-1.6 mph
Peak wind/direction/date	38 mph/W/7th
Windiest day avg. value/date	17.3 mph/7th
Calmest day avg. value/date	0.4 mph/29th
# clear days	7
# partly cloudy days	15
# cloudy days	9
Dense fog dates (code 2)	2nd, 3rd, 4th, 22nd, 26th & 28th
Thunder dates (code 3)	-
Sleet dates (code 4)	-
Hail dates (code 5)	-
Freezing rain dates (code 6)	-

Table 4b

NOVEMBER

Avg. wind speed/Dep. Fm Norm.	6.2 mph/-2.5 mph
Peak wind/direction/date	37 mph/WNW/28th
Windiest day avg. value/date	20.8 mph/28th
Calmest day avg. value/date	0.8 mph/19th
# clear days	13
# partly cloudy days	11
# cloudy days	6
Dense fog dates (code 2)	2nd, 23rd, 25th, 26th & 27th
Thunder dates (code 3)	-
Sleet dates (code 4)	-
Hail dates (code 5)	-
Freezing rain dates (code 6)	-

Table 4c

ICE SAFETY TIPS FOR WINTER RECREATION

John S. Quinlan
Senior Meteorologist, NWS Albany

During many years, the ice surface on bodies of water in eastern New York and adjacent western New England is thick enough to support some recreational activities before the end of December. Above normal temperatures in some years, as well as periods of thaw and rain events, can act to delay the onset of ice formation, or to decay ice that is already in place. In addition, a deep blanket of snow may cover the ice during some years, which may weaken the ice beneath it. The snow acts as an insulator that slows down the freezing process, but also can prevent the ice from becoming thicker. In fact, the weight of the snow can

cause the ice beneath it to fracture or turn the top few inches of ice into slush.

For people to venture out on an ice-covered body of water, an ice thickness of 4 inches or more is needed. Snowmobiles and ATVs need at least 5 inches, cars and light trucks need at least 8 to 12 inches, and medium trucks need at least 12 to 15 inches, of ice thickness.

Factors which can be used to assess the strength of the ice include: the ice appearance; ice thickness; daily temperature; snow cover; water depth under the ice; size of the water body; water chemistry; currents, and; distribution of the load on the ice.

If you do venture out on an ice-covered body of water, do not go alone. Let others know where you are planning to go, and use common sense. If you do get involved in an emergency, call 911, or your local emergency number.

The Minnesota Department of Natural Resources has a very informative Ice Safety Page which can be found at:
http://www.dnr.state.mn.us/safety/ice/index.html

WINTER STORM PREPARATION

Brian Montgomery
Senior Meteorologist, NWS Albany

Even though the official start of winter is December 21st, the region has already experienced several winter weather episodes. With additional winter weather events expected, now is the time to review some winter storm preparations:

Disaster Kit -

- ✓ 3 gallons of water per person
- ✓ Non-perishable food and a manual can opener
- ✓ First aid kit
- ✓ Protective clothing
- ✓ Radio, NOAA Weather Radio All Hazards, flashlight, extra batteries
- ✓ Non-cordless phone
- ✓ Cash and/or traveler's cheques
- ✓ Necessities for infants, the elderly and those physically challenged
- ✓ Personal hygiene supplies
- ✓ Documents including birth certificates, medical and insurance

Vehicle Kit –

- ✓ Blankets and extra clothing
- ✓ Jumper cables
- ✓ Shovel
- ✓ Tire Repair Kit
- ✓ Sack of sand or cat litter in trunk to aid in tire traction
- ✓ Tow Rope
- ✓ Charged cell phone for emergencies

If Stranded –

- ✓ Call 911 via your cell phone or car-equipped emergency communications
- ✓ Stay with your vehicle
- ✓ Tie a brightly-colored cloth to antenna or side mirror to alert emergency responders
- ✓ Start the vehicle and use the heater for about 10 minutes every hour
- ✓ Attempt to move arms and legs to keep blood circulating, and to generate warmth
- ✓ Keep one window slightly open, preferably at the opposite side of in-blowing wind, to let fresh air in
- ✓ Leave the interior overhead light on during engine running to increase visibility to emergency responders
- ✓ When snow stops falling, and it's safe to do so, open vehicle hood to further increase your visibility for assistance

Additional information and resources are available from the Office of Climate, Water and Weather Services web site: http://www.weather.gov/om/winter/index.shtml

Are you an emergency manager or coordinator? Are you StormReady? This proactive program prepares communities with an action plan that responds to the threat of all types of severe weather. StormReady provides clear-cut advice to city leaders, emergency managers and media that can improve their local hazardous weather operations. Once a community meets preparedness criteria, outlined by a partnership between the National Weather Service, and state and local emergency managers, it will be declared "StormReady." For additional information, visit: http://www.stormready.noaa.gov, and contact our WCM, Raymond O'Keefe, for assistance with the application process.

FORECASTERS USE THE WES TO BRUSH UP ON WINTER WEATHER FORECASTING

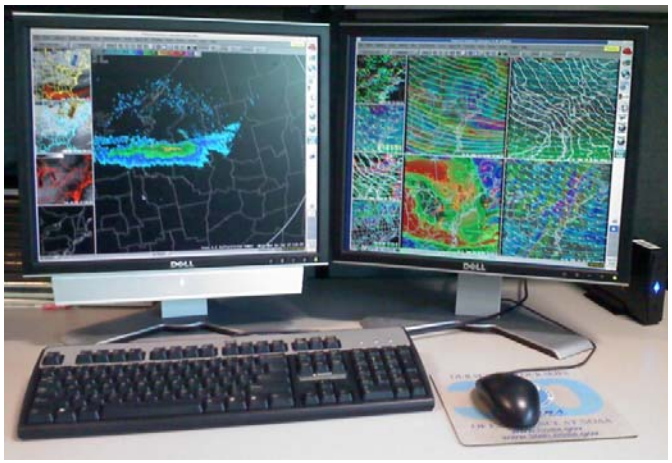
Joe Villani
Meteorologist, NWS Albany

Winter weather affects the entire Albany Forecast Area for several months each year, and can be challenging to forecast. Even before the winter season begins, forecasters need to be re-familiarized with the various intricacies of forecasting winter weather, and especially winter precipitation such as snow, sleet and freezing rain. To help with this, a machine called the Weather Event Simulator (WES) is used. The WES mimics the computer environment of the Advanced Weather Interactive Processing System (AWIPS) that forecasters use every day at National Weather Service offices to view data and prepare forecasts. The WES enables forecasters to interrogate data from a previous winter weather event and go through a simulation in displaced real-time as if it were actually occurring. This is very advantageous, since this can be done weeks, or even months, before the winter season begins, so forecasters can be ready by the time a winter storm actually impacts the region.

The simulations using the WES are prepared ahead of time by two forecasters. The training is then administered to the staff in groups of two, with each person getting hands-on training. For this season, the main focus of the training was on mixed precipitation. Forecasters went through a simulation, in displaced real-time, of a challenging winter weather event that produced snow, sleet and freezing rain, with various accumulations of each precipitation type. The training lasted several hours, and included various techniques utilized in forecasting wintry precipitation. Forecasters were able to prepare an entire simulated forecast, including Graphical Forecast Editor (GFE) grids, and associated winter weather watch, warning, and advisory statements.

Simulations are also created in the spring to prepare for the severe thunderstorm and flash flood season, which typically occurs during the summer months. As is the case with winter weather, forecasters need to be re-familiarized with forecasting significant warm-season weather events, and are able to go through a simulation of a severe weather and/or flash flood event in displaced real-time.

The WES is a very useful tool, helping forecasters stay ahead of inclement weather during each significant season.



WCM Words

Raymond G. O'Keefe
NWS Albany Warning Coordination Meteorologist

Not only does this issue of *StormBuster* mark the end of a decade and the transition to the 2010's, it also signals the end of an era here at the NWS Albany forecast office. Effective January 1, 2010, NWS Albany Meteorologist in Charge Gene Auciello will retire after 35 years of service to the National Weather Service. He will be missed. We wish him well in his retirement!

While 2010 marks the start of a new decade, it marks the end of the 30 year "average" period used by the National Climatic Data Center to establish climate normals for weather stations around the U.S.A. Once 2010 concludes, NCDC computers will start crunching the weather data for the period 1981-2010 to generate new average temperatures, precipitation, snowfall, and wind. It will be interesting to see the changes in climate from the current 1971-2000 years to the new normals.

From the Editor's Desk

As I'm writing this, it is less than a week before Christmas, and we've just missed a blockbuster snowstorm that has buried much of the eastern seaboard in record snowfall. But there is plenty of time this season to catch up. While you wait for the next big one, you can read the winter-themed articles we have provided. They are just perfect for this winter edition of Northeastern StormBuster. And as we kick off a new decade, our opening article looks back at the 2000s from a climatological perspective. This is followed by a recap of the fall season, which includes information on our first major snow event. Then we have articles dealing with ice safety and winter storm preparedness. Finally, we look at a training tool forecasters use to help maintain their proficiency in dealing with winter weather. Here's hoping you have a great holiday season, and winter ahead. We'll see you again in the spring.