Northeast Regional Climate Center

Mid-Atlantic Climate

CONTENTS

AUGUST 2011

VOLUME 111 NUMBER 8

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This project is conducted with funds provided by NOAA Contract No. EA133E-07-CN-0090.

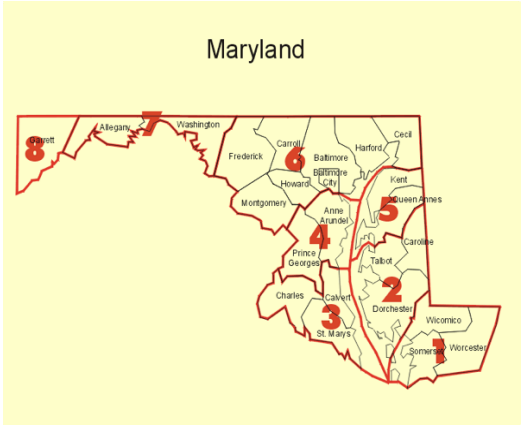
CLIMATE DIVISION MAPS

New Jersey Climate Divisions

1 Northern
2 Southern
3 Coastal

Delaware Climate Divisions

1 Northern
2 Southern



Maryland Climate Divisions

1 Southern Eastern Shore
2 Central Eastern Shore
3 Lower Southern
4 Upper Southern
5 Northern Eastern Shore
6 Northern Central
7 Appalachian Mountain
8 Allegheny Plateau

AUGUST WEATHER HIGHLIGHTS

The string of above normal monthly averages continued in August for the seventh consecutive month. The average temperature in the Mid-Atlantic region was 74.7 degrees, which was 0.7 degrees above normal. Departures among the states were 0.6 degrees above normal in Delaware and Maryland and 1.0 degree above normal in New Jersey. The high temperature for the month, 101 degrees, was recorded on the 1st at the downtown Baltimore, MD station. The cool spot was Oakland, MD, where the mercury fell to 46 degrees on the 30th.

The Mid-Atlantic region averaged 11.68 inches of rain in August. This total was only surpassed by the amount that fell in August 1955, 11.75 inches. Among the states, New Jersey had its wettest August in 117 years - the 16.74 inch average was a whopping 401% of normal. With 243% of the normal rainfall amount, Delaware saw its 4th wettest August, while Maryland (223%) had its 9th wettest August since 1895. While heavy rain from Tropical Storm Irene contributed to the 2011 totals in New Jersey, Delaware and eastern Maryland, these areas had already seen plenty of rain before the storm began to affect the area on the 27th. Seabrook Farms, NJ, the location with the highest monthly total, 24.28 inches, also had the highest daily total, 10.64 inches on the 15th.

Hurricane Irene was the first category one hurricane to make landfall in New Jersey in over 100 years. It passed just north of Atlantic City, NJ early on the 28th, then weakened to a tropical storm as it approached the New York City metro area around 8 AM. In anticipation of the storm's potential, flights were cancelled throughout the region, and millions of coastal residents faced mandatory evacuations. As the storm wound down, the impacts to the coastal areas were not as severe as expected, with only a few locations sustaining serious wind damage or beach erosion. Inland areas were not so lucky. Irene dumped 6 to 8 inches of rain over eastern Maryland, Delaware and New Jersey. These same areas had already tallied 6 to 8 inches of rain from August 1-26 and the saturated soils could not absorb any more moisture. The resultant flash flooding washed out roads, bridges, undermined railroads, brought down trees and power lines and flooded homes and businesses. Floodwaters encompassed the Passaic and Raritan River basins in New Jersey, displacing thousands as roads became rivers and homes and businesses filled with water. Irene took the lives of at least 12 in the Mid-Atlantic region, either from being washed away in floodwaters, electrocution, or due to trees falling on vehicles or houses. During the days following the storm, federal officials, including the President, toured the most ravaged areas. Every county in New Jersey was declared a federal disaster area, eligible for $116 million in federal disaster aid. All of Delaware, and thirteen counties in eastern Maryland were also eligible for public disaster assistance.

Daily Precipitation Records (inches)

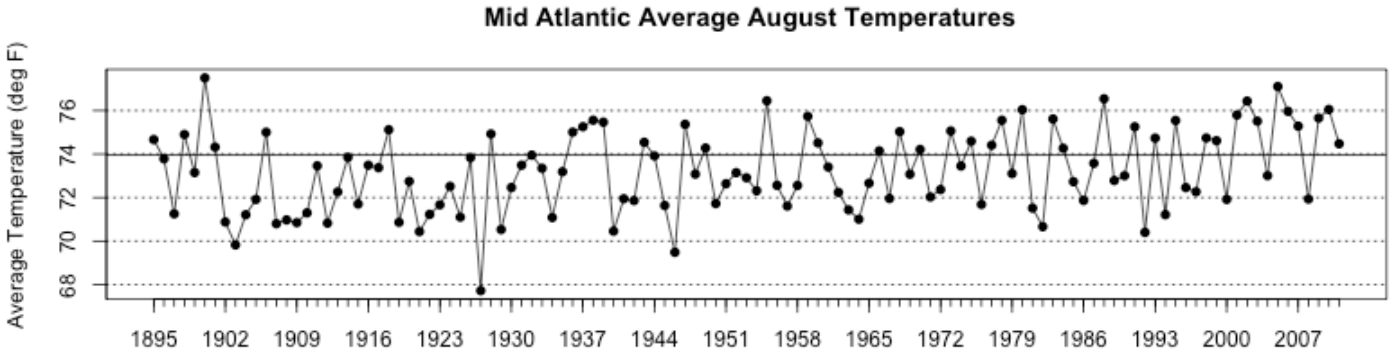
Station	Date	New	Previous
Newark, NJ	14	6.40	1.11 in 1999
Baltimore, MD	18	1.72	1.55 in 1946
Wilmington, DE	27	5.38	3.77 in 1971
Wilmington, DE	28	1.56	1.50 in 1903
Newark, NJ	28	5.22	2.04 in 1971

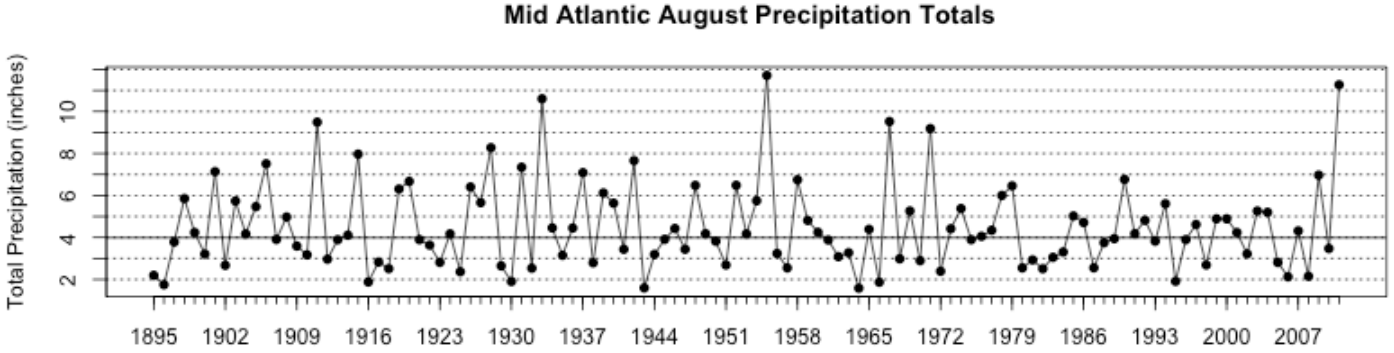
Wettest August

Station	New	Previous
Newark, NJ	18.79	11.84 in 1955

All-Time Wettest Month

Station	New	Previous
Newark, NJ	18.79	13.22 in October 2005





The 2011 values depicted on these graphs are based on preliminary data.

Waterlogged NJ: August 2011
and Summer 2011 Summary

Dr. David A. Robinson, New Jersey State Climatologist
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August 2011 will go down in New Jersey's weather annals as one of the most remarkable months on record. For most residents, the most memorable event of the month was Hurricane Irene. The first land falling hurricane in NJ since 1903, Irene necessitated the largest coastal evacuation in state history, record flooding on a number of rivers, power outages for almost one million customers, and tragically the loss of life of at least a dozen NJ residents. Others will remember severe local flash flooding associated with several massive rainstorms earlier in the month. In fact, prior to a drop of rain from Irene, enough precipitation had fallen to rank this as the state's 6th wettest August since 1895. With the addition of Irene's rainfall, the previous record for any calendar month back to 1895 was shattered by almost 5".

Before discussing the month's storms, let's take a look at August's temperatures. The monthly average of 74.2° ties with 1928 and 1978 as the 26th warmest of the past 117 years. This is 0.8° above the 1981-2010 average. On four afternoons the high temperature equaled or exceeded 90° at one of the approximately 60 stations the Office of the New Jersey State Climatologist monitors across the state. The warmest day was the 1st when New Brunswick (Middlesex County) topped out at 97° and five other stations reached 95°. Four stations reached 92° on the 2nd. The 7th saw Hammonton (Atlantic) hit 93° and Egg Harbor Township (Atlantic) and Hawthorne (Passaic) at 92°. Atlantic City Marina (Atlantic) got to 93° on the 8th, when six stations reached 92°.

On six August mornings at least one NJ station fell into the 40°s. On the 12th it was 47° at Pequest (Warren) and Walpack (Sussex) and 48° in Basking Ridge (Somerset). The 23rd saw Pequest drop to 46°, Walpack to 48° and four other stations to 49°, making this the coolest morning of the month. Pequest was 49° on the 24th, 47° on the 29th, when Walpack dropped to 49°, and 48° on the 30th. The last day of the month saw Berkeley Township (Ocean) reach 49°.

The preliminary estimate of statewide August precipitation is 16.75". This staggering figure is 12.54" above the 1981-2010 average and is by a wide margin the wettest August on record. Or any calendar month for that matter, as it far surpasses the previous record of 11.98" in October 2005. Table 1 shows the 10 wettest Augusts, with the 1955 record associated with hurricanes Connie and Diane now sitting at #2 for August and #3 for any month.

Rank	Year	Pcp
1	2011	16.75
2	1955	11.44
3	1933	10.71
4	1971	10.36
5	1967	9.11
6	1901	9.01
7	1911	8.52
8	1990	8.24
9	1927	8.17
10	1942	7.76

Table 1. The ten wettest Augusts across NJ since 1895.

An examination of observations from over 150 NJ CoCoRaHS stations shows that Freehold Township (Monmouth) received over two feet of rain in August (24.68", with one day missing when possibly a little light rain fell). Table 2 shows the Freehold report and the next nine highest totals, including stations in 7 of NJ's 21 counties.

Rank	Pcp	Town	County
1	24.68"*	Freehold Twp	Monmouth
2	23.29"	Upper Deerfield Twp	Cumberland
3	22.32"	Franklin Twp	Gloucester
4	20.39"	Cranbury Twp	Middlesex
5	20.24"	Howell Twp	Monmouth
6	20.04"	Holmdel Twp	Monmouth
7	19.95"	West Milford	Passaic
8	19.90"*	Hammonton	Atlantic
9	19.61"*	Morris Twp	Morris
10	19.53"	Randolph Twp	Morris

Table 2. The ten wettest CoCoRaHS locations in NJ during August 2011. Asterisk denotes incomplete reports, with one or more days missing where some minor amounts of precipitation may have fallen.

Table 3 breaks down the monthly precipitation totals by county, with the highest and lowest values presented. County maximums were at least 15.43" (Cape May) and the top stations in Cumberland, Gloucester, Middlesex and Monmouth counties were over 20.00". Six other counties had maximums between 19.00-19.99" and only Ocean and Cape May counties had a station minimum under 10". The 7.80" in Little Egg Harbor Township (Ocean) was the lowest monthly total in NJ. Figure 1 shows the distribution of August precipitation across NJ. Clearly, no location was immune from excessive rain totals.

County	Pcp	Town
Atlantic	19.90"	Hammonton
	11.33"	Linwood
Bergen	17.70"*	Palisades Park
	14.31"	Glen Rock
Burlington	17.81"	Medford Twp
	13.54"	Southampton Twp
Camden	18.26"	Berlin Twp
	17.32"	Winslow Twp
Cape May	15.43"	Upper Twp
	9.83"	Dennis Twp
Cumberland	23.29"*	Upper Deerfield Twp
	IA	
Essex	18.79"	Newark (NWS report)
	IA	
Gloucester	22.32"	Franklin Twp
	18.88"	Woolwich Twp
Hudson	19.16"	Harrison
	IA	
Hunterdon	17.09"*	Holland Twp
	14.44"	Stockton
Mercer	18.93"	Princeton Twp
	15.96"	Ewing Twp
Middlesex	20.39"	Cranbury

	16.31	North Brunswick
Monmouth	24.68"*	Freehold Twp
	14.31"	Wall Twp
Morris	19.61"*	Morris Twp
	13.17"	Boonton
Ocean	17.13"	Jackson Twp
	7.80"	Little Egg Harbor Twp
Passaic	19.95"	West Milford
	15.43"	Hawthorne
Salem	19.39"	Woodstown
	IA	
Somerset	19.09"	Hillsborough Twp
	15.24"	Bernards Twp
Sussex	18.22"	Hardyston Twp
	14.70"	Andover Twp
Union	17.73"	New Providence
	IA	
Warren	16.69"	White Twp
	15.16"	Allamuchy Twp

Table 3. The wettest and driest CoCoRaHS locations in each NJ county during August 2011. Asterisk denotes incomplete reports, with one or more days missing where some minor amounts of precipitation may have fallen. In some counties there is only one station with few enough missing data to be considered to have complete or near complete observations for August. Other stations have an inadequate number of reports (IA) for a complete evaluation.

Record precipitation for any month was observed at a number of stations across NJ. Table 4 shows four of these stations, including two with observations back to 1893. Only stations in the southeast failed to exceed a monthly record.

Name	Aug. 2011	Prior Max	Period of Record
Atlantic City Int'l AP	11.11"	16.06" Aug. 1997	Jul. 1958 –
Atlantic City Marina	9.37"	15.69" Jul. 1959	Jan. 1874 –
Hightstown	19.29"	13.86" Aug. 1955	Feb. 1893 –
New Brunswick	17.43"	13.77" Aug. 1955	Jan. 1893 –
Newark Int'l AP	18.79"	13.22" Oct. 2005	Feb. 1931 –
Seabrook Farms	24.28"	12.99" Aug. 1967	Aug. 1948 – *missing '52-'62

Table 4. Comparison of August 2011 precipitation with prior record wet months (for any calendar month) at selected NJ stations with lengthy records.

There were 13 events in August that deposited at least 0.99" at one or more locations. Thunderstorms were found amidst each event. The precipitation onslaught began on the 1st when heavy localized storms brought 1.37" to Franklin Township and 1.24" to Mantua Township, each in Gloucester County, with some flash flooding observed. Up to quarter-size hail fell in parts of Gloucester and Camden counties and a wind gust of 46 mph occurred at Bivalve (Cumberland). Trees and wires fell in five southern counties. On the 3rd, the Burlington/Ocean/Monmouth and Bergen/Passaic areas received up to 1.42" at Southampton (Burlington) and 1.41" in Tenafly (Bergen).
The northern half of NJ saw storms from the afternoon of the 6th into early on the 7th. Sussex and Warren counties received the most, including 2.63" in Wantage and 2.76" at Montague, each in Sussex. The afternoon and evening of the 7th brought rain to the northern border counties, with

Newton (Sussex) catching 1.10". Moorestown in western Burlington County also received 0.78". A swath of heavy rain fell from the southwest to northeast on the 9th, accompanied by local flash flooding. 2.36" fell at Woolwich Township (Gloucester), 2.33" in Franklin Township (Somerset) and 2.29" at Long Hill Township (Morris). Trees and wires were blown down in Gloucester and Salem counties. Little fell in coastal counties and the far northwest.

In most months the storms that pounded the state on the 13th-14th would highlight any summary. While later upstaged by Irene, prodigious rains brought flash flooding and flooding of several moderate size rivers in southwest to central locations. The situation was especially devastating in eastern Salem, western Cumberland, eastern Gloucester, eastern Camden and western Atlantic counties where roads and several dams were overtopped or destroyed. In this area, 10.82" was measured in Upper Deerfield Township, 8.53" in Franklin Township (Gloucester), 8.04" in Winslow Township (Camden) and 7.51" at Hammonton (Atlantic). Of 176 CoCoRaHS reports across NJ, 2 stations recorded from 6-6.99", 19 from 5-5.99", and 48 from 4-4.99". Trees and wires came down in some areas. A gust of 40 mph was observed at Seaside Heights (Ocean) though clearly gusts were higher in some areas were wind damage occurred yet no anemometers are located. Only the extreme southeast (0.44" in Egg Harbor Township (Atlantic)) and northwest escaped heavy rain.

Storms continued to plague the state on the 15th. Fortunately, it was the exact regions that escaped the previous event that caught the most this time. This includes 3.63" at Hardyston Township (Sussex), 3.12" in Rockaway Township (Morris) and 3.40" in Upper Township (Cape May). Pea-size hail was observed in Bridgewater Township (Somerset). Moderate flooding was observed in Sussex and Somerset counties. The next day, 0.99" fell at Buena Vista Township (Atlantic) and 0.68" in Rumson (Monmouth). Figure 2 shows the total precipitation that fell across the state from the 13th-16th. Only scattered areas along the southeast coast were immune from heavy totals.

Next up were afternoon thunderstorms on the 18th and 19th. The first day saw 2.55" and 2.24" at two Blairstown (Warren) stations, 1.92" in Woodstown (Salem) and 1.91" at Freehold Township (Monmouth). Penny-sized hail fell in Mt. Laurel (Burlington) and pea-size hail in Hillsborough (Somerset). The 19th saw the heaviest amounts in the northeast, with 1.85" at River Vale (Bergen) and 1.53" in West Milford (Passaic). 1.50" also fell in Berlin Township (Camden), with some local flooding in Camden and Hunterdon counties. Little to no rain fell along the coast. There was damage to trees, wires and some structures in eight counties scattered around the state and West Milford (Passaic) and Lebanon Township (Hunterdon) received pea-size hail.

Yet another major localized storm brought severe flooding to the Monmouth-northern Ocean county area on the 21st. Howell quickly received 4.61", two Jackson Township (Ocean) stations caught 3.85" and 3.40" and Ocean Township (Monmouth) received 3.75". The entire central portion of the state had heavy rain with little to none in the southernmost four counties. Once again, tree and wire damage occurred from strong gusts in Passaic, Morris, Bergen, Burlington, and Monmouth counties.

Contributing to the saturated soils and high river levels that preceded Irene, southwest areas previously clobbered on the 13th-14th received heavy rain on the 25th. 3.14" fell in Greenwich Township (Camden) and 2.29" at Bridgton (Cumberland). Less than an inch fell most everywhere else in NJ.

The weekend visit of Irene on the 27th-28th was preceded by an unprecedented evacuation of at least one million visitors and residents from coastal counties from Cape May to Monmouth. The morning of the 27th saw rain showers dotting the state, some in the north associated with the remnants of the front that brought the rain on the 25th. To the south, a shield of moderate to heavy rain began slowly moving northward. By evening, the entire state was receiving squalls with heavy rain, excessive wind and occasional lightning. At times, rainfall rates exceeded well over an inch per hour, with flash flooding quickly becoming a dangerous hazard. Trees began to topple, many uprooted due to the already saturated soils. Subsequently, wires came down and the bright greenish hue of exploding transformers illuminated the sky. By dawn on the 28th the heaviest rain had departed the south as Irene made landfall at Little Egg Harbor, just north of Atlantic City. By the time it exited into eastern Raritan Bay a few hours later Irene had been downgraded to a tropical storm. By mid morning the heavy rain made a full exit from NJ. Winds continued to gust strongly as the storm moved over New York City and into western Connecticut, the wind now from the northwest as opposed to earlier east to northeast gales, and some light showers passed through the state during the afternoon. By this time the secondary and major rivers within NJ were in flood stage. The smaller ones crested on the 28th, while the Raritan River did so on the 29th and the Passaic not until the 30th.

Irene was the first hurricane to make landfall in New Jersey since 1903 and only the third since colonists settled the region (September 1821 was the other one). While fortunately arriving as only a weak category 1 storm, as the preceding paragraph began to explain, Irene impacted the state significantly through a combination of coastal flooding, strong wind and heavy rain. Coastal areas suffered beach erosion and some structural damage, however escaped what would have been far more significant consequences had the storm arrived stronger.

Tropical storm force winds throughout NJ brought down numerous trees onto homes and power lines resulting in structural damage and the loss of power to almost one million customers. Along the coast, winds gusted to near hurricane force, reaching 69 mph at Harvey Cedars (Ocean), 66 mph at the Atlantic City Marina (Atlantic), 65 mph at Point Pleasant Beach, with similar gusts from Cape May to Sandy Hook. Inland, gusts were in the 40-60 mph range. The minimum pressure in the eastern third of the state was 28.45”-28.65”, with the western third between 28.75”-28.85”.

Rainfall was generally in the 5-10" range and amounted to NJ's largest rainstorm in over a century (table 5 and figure 3). The statewide rainfall averaged approximately 7”. This surpassed the Tropical Storm Doria on August 27-28′ 1971 and is only behind tropical rains from an October 8-10, 1903 storm that occurred several weeks after the hurricane.

County	Pcp	Town	Source
Atlantic	8.58"	Estell Manor	spotter
Bergen	9.06"	Garfield	spotter
Burlington	7.30"	Crosswicks	spotter
Camden	8.61"	Somerdale	Coop
Cape May	8.61""	Upper Twp	CoCo
Cumberland	7.92"	Upper Deerfield Twp	Mesonet
Essex	9.96"	Orange	spotter
Gloucester	7.84""	Franklin Twp	CoCo
Hudson	9.15"	Harrison	Coop
Hunterdon	7.84"	Lebanon	CoCo
Mercer	8.40"	Windsor	spotter
Middlesex	8.87"	Edison	spotter
Monmouth	11.27"	Freehold Twp	CoCo
Morris	10.54"	Jefferson Twp	CoCo
Ocean	7.33"	Brick Twp	CoCo
Passaic	10.20"	Wayne	ONJSC
Salem	7.55"	Woodstown	SafetyNet
Somerset	8.35"	Bedminster	CoCo
Sussex	7.98"	Wantage	CoCo
Union	10.79"	Elizabeth	spotter
Warren	7.25"	Mansfield Twp	CoCo

Table 5. The wettest locations in each NJ county during Irene (August 27-28). Posted data are drawn from over 200 observations deemed reasonable. Sources include National Weather Service spotters, NWS Cooperative Observers, Office of the NJ State Climatologist NJ Mesonet, ONJSC NJ SafetyNet, Community Collaborative Rain, Hail and Snow (CoCoRaHS) network, and a direct report to the ONJSC.

On the heels of top heavy rains earlier in the month, it is hardly surprising that Irene's rain resulted in streams and rivers rising to record or near record stages. Homes, businesses and roadways were inundated throughout the state. Table 6 lists new records on rivers in central and northern areas. Gauges at these locations have at least 50 years of record and in most cases extend back to the early 20th century. The Passaic River at Little Falls (Passaic) crested at approximately 14.2'. This is the second highest level on record, only behind the October 10, 1903 crest of 17.5' and surpassing 12.9' on April 7, 1984 for second place. At Bound Brook (Somerset), the Raritan River crested at 41.9', just behind the 42.1' reached on September 17, 1999 following Hurricane Floyd. Falling to third place is the 38.4' crest on April 16, 2007.

River	Gauge location	Prior record
Assunpink Creek	Trenton (Mercer)	1975
Millstone	Blackwells Mills (Somerset)	1999
N. Branch Rancocas Creek	Pemberton (Burlington)	1939
Passaic	Millington (Morris)	1996
Passaic	Pine Brook (Morris)	1903
Pompton	Pompton Plains (Morris)	1984
Ramapo	Mahwah (Bergen)	1955
Ramapo	Pompton Lakes (Passaic)	1984
Rockaway	Boonton (Morris) above reservoir	1984
Rockaway	Boonton (Morris) below reservoir	1979

Table 6. Gauging stations on NJ rivers that exceeded prior record maximum crests as a result of Irene's rainfall. Information courtesy of the NWS Middle Atlantic River Forecast Center.

The days following Irene proved to be sunny and tranquil, with the highest pressure of the month being observed on the 31st, ranging from 30.20"-30.25". Irene was a storm for the record books. For that matter so was the entire month of August. However mere numbers do not tell the story of the loss of so many lives, nor the enormous hardships endured by so many who coped with this storm's wrath and with flooding earlier in the month.

Summer 2011

The 2011 summer (June-August) proved to be New Jersey's 3rd warmest since statewide records commenced in 1895 (table 7). The average temperature of 75.1° is 2.3° above the 1981-2010 average (2.9° above the 1971-2000 average). The heat peaked in July, which with the late receipt of some data moved it from what was previously reported to be the second warmest on record to a tie with 1955 for warmest. This included July 22, one of the hottest days ever experienced by NJ residents. The NWS station at Newark Airport reached 108°, only 2° below the record state maximum. At least one location in every county reached triple digits on the 22nd. Seven of the 10 hottest summers in the past 117 years have occurred in the past 13 years.

Rank	Year	Tmp
1	2010	76.1
2	2005	75.6
3	**2011**	**75.1**
4	1949	74.6
5	1999	74.5
6	2002	74.4
7	2006	74.3
8	1955	74.1
9	2008	74.0
10	1900	73.9

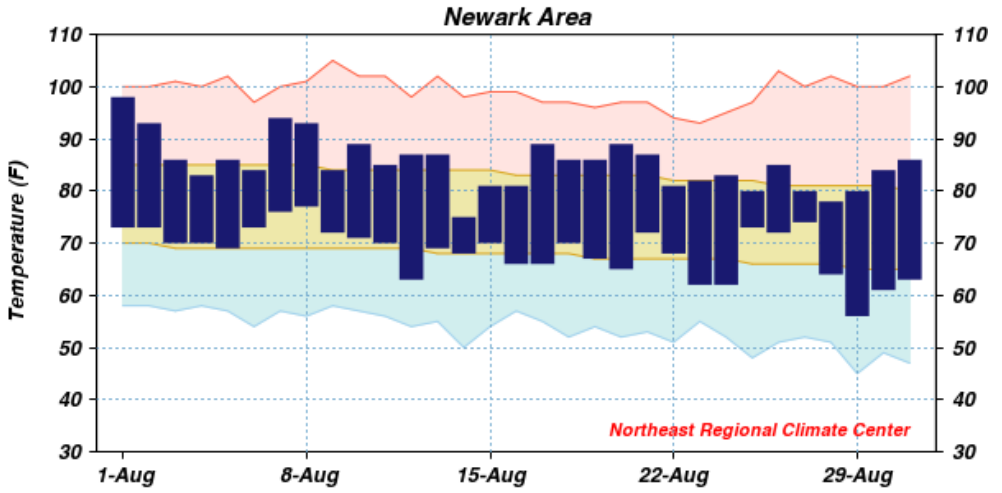
Table 7. The ten warmest summers across New Jersey since 1895.

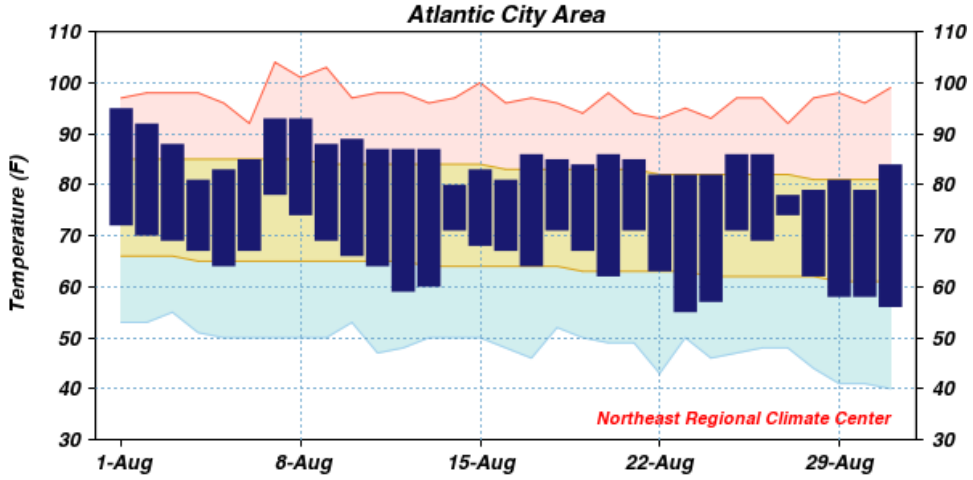
While statewide average rainfall was slightly below average in June and July, the ultra-wet August was enough to push the summer 2011 rainfall well above the previous record maximum. The 24.01" that fell is 11.26" above the 1981-2010 average. This exceeds the previous wettest summer (1928) by 4.34" (table 8). This summer was also the wettest of any season on record, surpassing fall 1983 for top honors. Nine different decades are represented in the top 10.

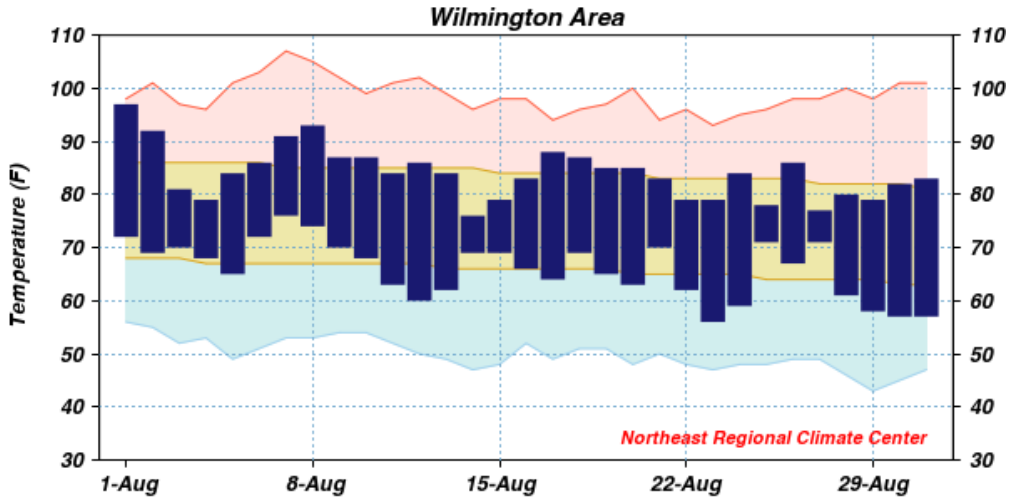
Rank	Year	Pcp
1	**2011**	**24.01**
2	1928	19.67
3	1938	19.64
4	1903	19.50
5	1975	19.29
6	2009	19.07
7	1897	18.55
8	1945	17.98
9	1967	17.94
10	1942	17.82

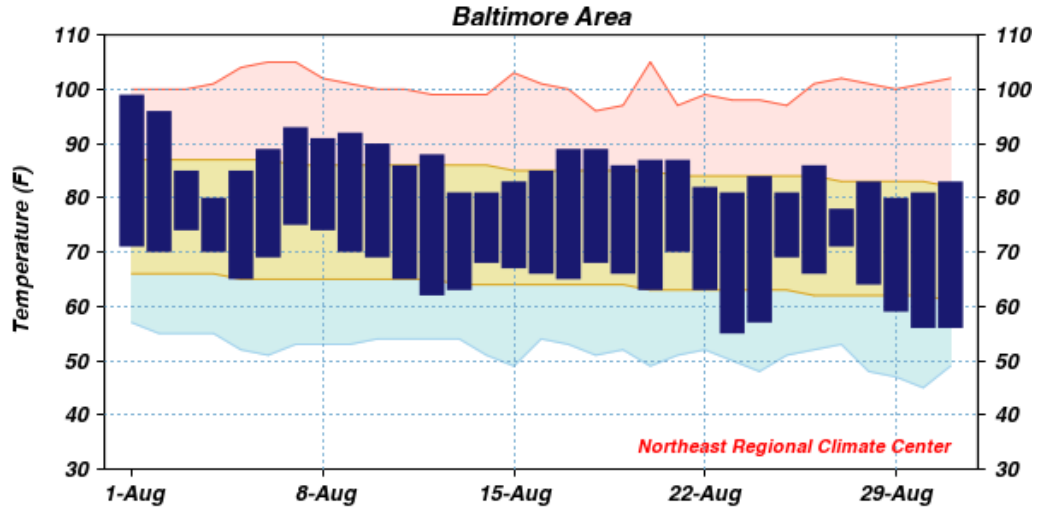
Table 8. The ten wettest summers (June-August) across New Jersey since 1895.

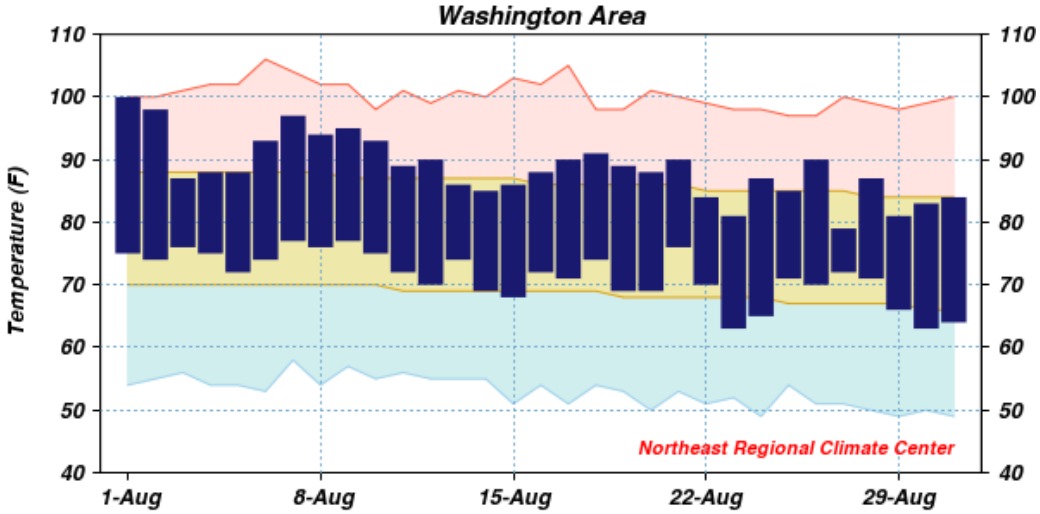
DAILY AVERAGE TEMPERATURES AND THE 30-YEAR NORMAL

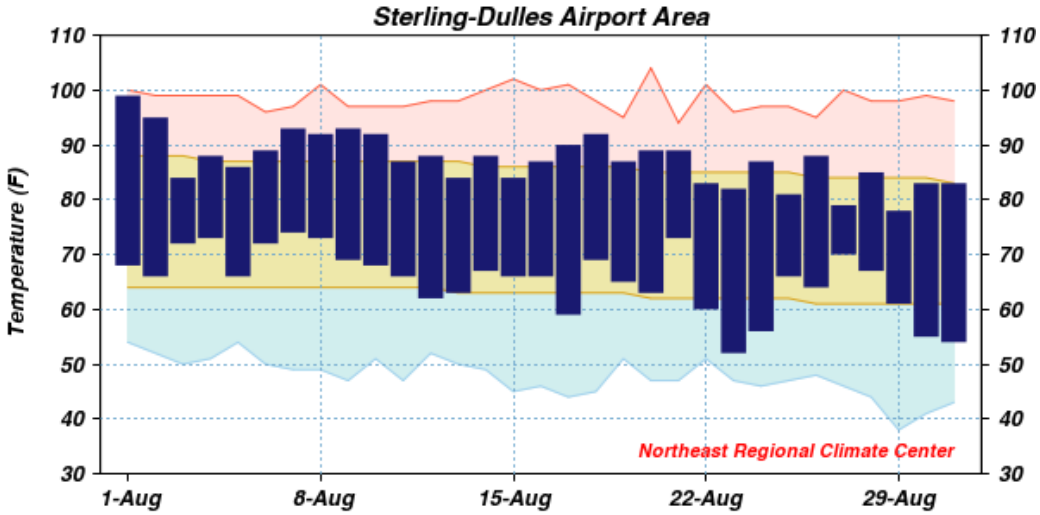






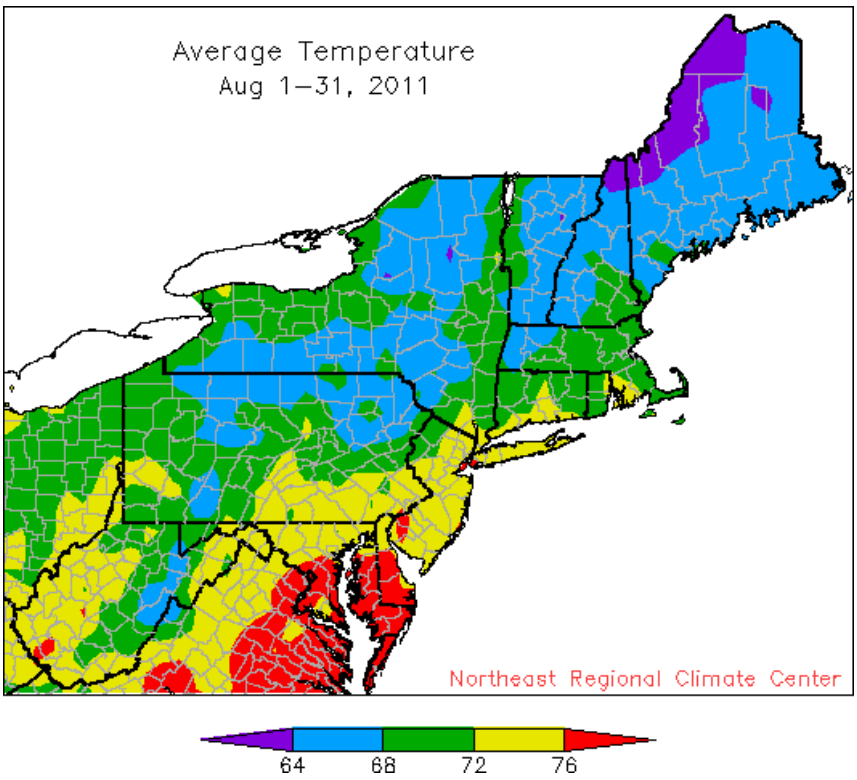


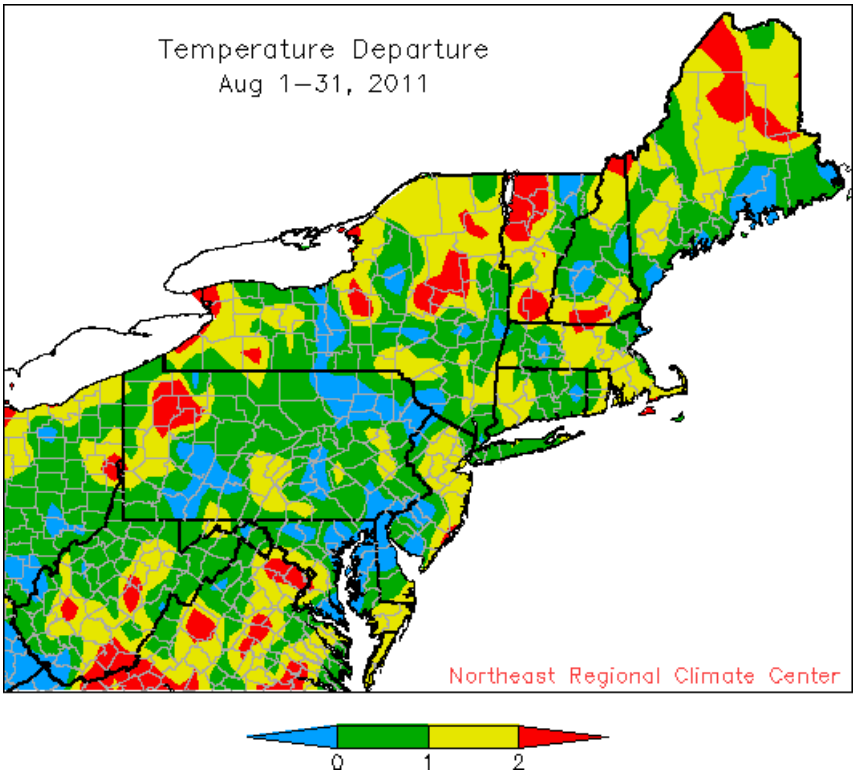




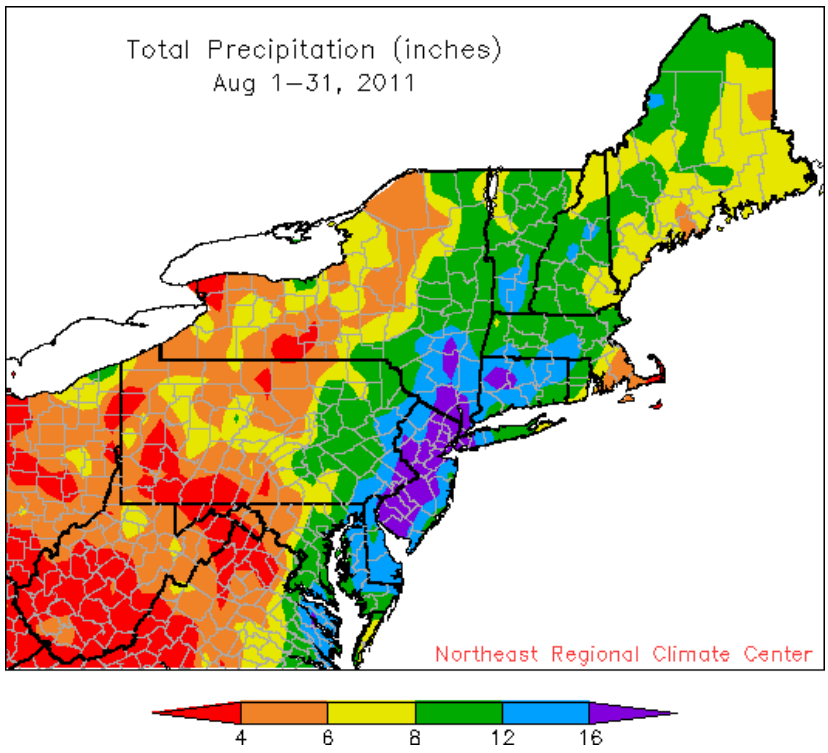
Area between normal max and min temperatures has tan shading.
Red line connects record high temperatures.
Light blue line connects record low temperatures.

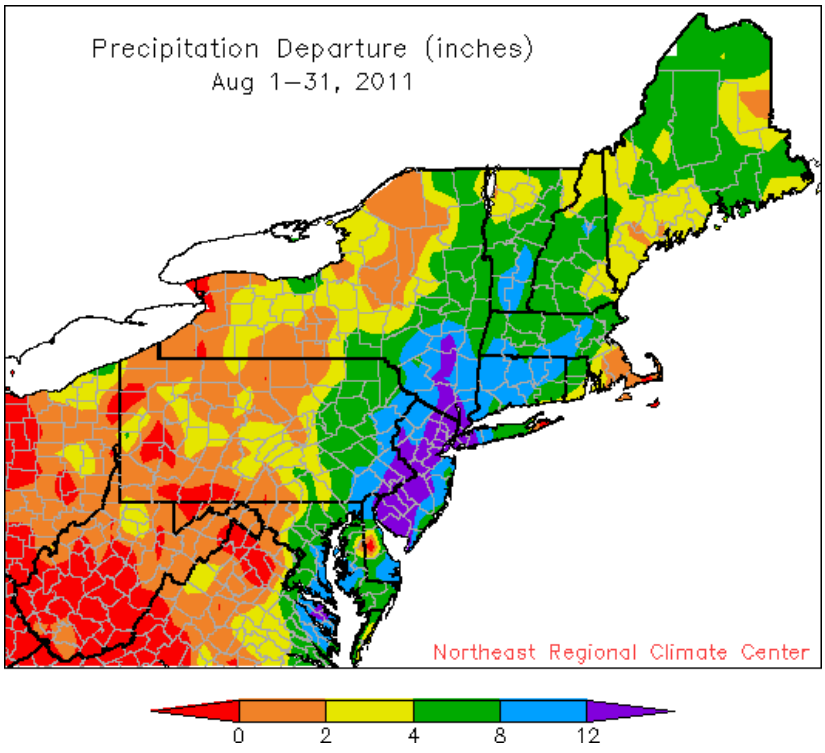
MONTHLY TEMPERATURE MAPS





MONTHLY PRECIPITATION MAPS





PRELIMINARY MONTHLY SUMMARIZED DATA AUGUST 2011

	TEMPERATURE (F)												PRECIPITATION (INCHES)					
STATION	MONTHLY AVERAGES				EXTREMES				NUMBER OF DAYS				MONTHLY TOTALS			EXTREMES		SNOWFALL	
	AVG MAX	AVG MIN	MON AVG	DEPRT	MON MAX	DAY	MON MIN	DAY	MAX 90+	70-	MIN 65+	50-	MON TOT	DEPRT	DAYS 0.1+	DLY MAX	DAY	MON TOT	DLY DAY MAX
-DE: NORTHERN-																			
BEAR 2 SW	83.5	64.4	73.9	-0.6	93	1	54	30+	2	0	18	0	15.02	11.25	9	5.12	14	0	
WILMINGTON NEW CAS	84.0	65.9	75.0	-0.2	97	1	56	23	4	0	19	0	14.70	11.45	11	5.38	27	0	
WILMNGTON PORTER R	82.3	66.4	74.3	-0.3	94	1	60	30+	2	0	20	0	14.75	11.08	12	3.98	27	0	
-DIVISION-			74.4	-0.5									14.82	11.35					
-DE: SOUTHERN-																			
DOVER	85.7	66.7	76.2	0.1	93	2	58	31+	6	0	19	0	9.62	4.70				NM	
-DIVISION-			76.2	0.8															
-STATE-			75.8	0.6									10.49	6.17				0	
-MD: SOUTHEASTERN-																			
SALISBURY WICOMICO	87.0	66.7	76.8	1.9	94	9+	57	31	10	0	21	0	11.79	7.36	10	5.58	27	0	
-DIVISION-			76.8	1.2									11.79	7.14					
-MD: CENTRAL EAST-																			
-DIVISION-	76.8			0.4									12.63	8.58					
-MD: LOWER SOUTHE-																			
MECHANICSVILLE 5 N	83.4	64.1	73.8	0.1	92	2	54	24+	4	0	15	0	12.55	8.67	6	8.67	28	0	
SOLOMONS	85.6	71.6	78.6	0.1	93	8+	64	31+	7	0	29	0						NM	
-DIVISION-			76.2	1.0									12.55	8.62					
-MD: UPPER SOUTHE-																			
BALTIMORE WASH INT	85.8	66.0	75.9	0.8	99	1	55	23	6	0	21	0	10.38	7.09	10	3.59	27	0	
BELTSVILLE	86.0	66.8	76.4	0.6	97	2	55	30	6	0	22	0	12.45	9.18	9	4.47	28	0	
DALECARLIA RSVR	87.3	66.6	77.0	0.2	96	1	57	23+	10	0	21	0	7.49	3.63	10	3.05	28	0	
LAUREL 3 W *	86.1	67.7	76.9	-0.2	98	1	60	31+										NM	
BALTIMORE DOWNTOWN	88.0	73.1	80.5	1.5	101	1	67	31+	10	0	31	0	11.97	8.58	12	2.61	27	NM	
NATL ARBORETUM DC*	89.9	68.1	79.0	1.0	100	3+	57	30+					8.76	5.35	10	4.43	28	0	
OXON HILL	87.1	67.3	77.2	0.3	99	2	57	30	9	0	25	0	9.86	6.24	10	5.08	28	0	
UPPER MARLBORO 3 N	86.7	65.4	76.1	1.0	99	2	55	31+	8	0	19	0						NM	
-DIVISION-			77.4	1.4									10.15	6.56					
-MD: NORTHEASTERN-																			
STEVENSVILLE	84.9	69.6	77.2	1.0	94	2	61	31+	6	0	27	0	9.73		10	4.67	28	0	
-DIVISION-			77.2	1.6									9.73	6.35					
-MD: NORTHERN CEN-																			
ABERDEEN PHILLIPS*	85.2	65.8	75.5	0.2	97	1	58	31										0	
BRIGHTON DAM													10.15		12	3.55	28	0	
CATOCTIN MTN PK	80.9	62.2	71.6	-0.0	91	1	50	23	2	0	11	1	4.47	0.59	10	1.25	28	NM	
CONOWINGO DAM													11.69	7.78	12	4.80	28	NM	
CYLBURN	80.3	64.7	72.5	-0.4	91	2	55	30	2	0	17	0						NM	
DAMASCUS	82.7	65.1	73.9	0.9	94	1	53	23	2	0	19	0	8.04	3.75	11	2.15	14	NM	
EMMITSBURG 2 SE	83.3	61.8	72.6	-0.1	95	2	51	31+	3	0	11	0	4.30	0.90	8	1.51	28	NM	
FREDERICK 2 NNE	86.9	64.5	75.7	0.8	98	2	53	31+	9	0	16	0	3.72	0.21	9	1.16	28	NM	
MILLERS 4 NE *	83.3	62.8	73.1	1.1	94	1	50	30										0	
SMITHSBURG	83.7	60.4	72.0	-1.1	95	2	48	23	3	0	6	3	7.19	4.05	11	1.80	16	NM	
WESTMINSTER POL BR	84.7	63.6	74.2	0.9	95	2	53	31+	4	0	16	0	4.99	1.27	10	2.53	28	0	
-DIVISION-			73.5	-0.4									5.45	1.88					
-MD: APPALACHIAN -																			
CUMBERLAND 2 *	87.6	61.6	74.6	-0.8	97	3	51	31+										NM	
FROSTBURG 2	79.3	58.2	68.8	1.0	89	5	49	23	0	2	8	6	4.10	0.50	9	1.72	20	0	
SHARPSBURG 5 S	86.0	60.7	73.4	0.6	96	2	49	24+	5	0	8	2	4.03	0.80	6	1.84	15	NM	
WILLIAMSPORT *	85.6	62.5	74.1	-0.0	96	3+	52	24										0	
-DIVISION-			72.7	1.0									4.07	0.91					
-MD: ALLEGHENY PL-																			
OAKLAND 1 SE	79.1	56.8	68.0	1.1	86	1	46	30+	0	0	6	7	4.00	0.22	11	0.94	26	0	
KITZMILLER 1 W *	81.2	60.7	71.0		90	1	51	23	1	0								NM	
-DIVISION-			69.5	1.6									4.00	0.32					
-STATE-			74.8	0.6									8.32	4.59				0	

STATION	TEMPERATURE (F)												PRECIPITATION (INCHES)						
	MONTHLY AVERAGES				EXTREMES				NUMBER OF DAYS				MONTHLY TOTALS			EXTREMES		SNOWFALL	
	AVG MAX	AVG MIN	MON AVG	DEPRT	MON MAX	DAY	MON MIN	DAY	MAX 90+	70-	MIN 65+	50-	MON TOT	DEPRT	DAYS 0.1+	DLY MAX	DAY	MON TOT	DLY MAX DAY
-NJ: NORTHERN-																			
BELVIDERE BRG *	81.0	60.8	70.9	-0.7	92	2	51	31+					15.85	11.95	11	6.00	28	0	
BOONTON 1 SE *	84.5	62.8	73.6	1.3	94	2	54	29										0	
BOUND BROOK 2 W	83.6	66.7	75.2		95	2	57	30+	7	0	22	0	19.48	15.45	11	6.90	28	0	
CHATHAM 2 W	82.4	62.8	72.6	-0.5	93	2	54	30+	2	1	14	0						0	
CRANFORD	82.5	66.1	74.3	0.8	95	3	54	12	3	1	21	0	18.93	15.14	13	9.70	28	0	
FLEMINGTON 5 NNW *	83.7	62.1	72.9	0.8	92	2	52	30+										0	
HARRISON *	84.4	66.5	75.5	-0.6	96	2	58	29										NM	
NEWARK INTL AP	85.2	68.5	76.9	1.1	98	1	56	29	4	0	24	0	18.79	15.09	11	6.40	14	0	
PHILLIPSBURG EAST*	82.7	62.7	72.7	0.6	91	2	53	30+										0	
PLAINFIELD	85.9	66.9	76.4	2.0	97	1	57	29	5	0	23	0	19.76	16.03	12	9.07	28	0	
POTTERSVILLE 2 NNW	79.0	62.9	71.0		94	2	56	30+	3	2	13	0	13.77	9.53	11	4.73	28	0	
SUSSEX 2 NW *	80.7	59.9	70.3	0.9	90	2	49	30										0	
WAYNE	83.2	65.5	74.4		93	2	58	29+	3	0	16	0	18.08		14	9.28	28	0	
WERTSVILLE 4 NE *	83.2	62.8	73.0	0.9	93	2	54	23										0	
TOCKS ISLAND	79.9	61.4	70.7		89	2	53	29	0	1	11	0						NM	
-DIVISION-			73.4	1.5									17.81	13.67					
-NJ: SOUTHERN-																			
ATLANTIC CITY INTL	85.1	65.9	75.5	1.1	95	1	55	23	4	0	18	0	11.11	7.00	9	4.39	27	0	
ESTELL MANOR	85.4	63.5	74.4	0.5	94	2	52	31	4	0	15	0	14.55	9.83	11	8.57	28	0	
FREEHOLD MARLBORO*	84.3	63.9	74.1	0.3	93	2	54	29										NM	
HAMMONTON 1 NE *	84.9	64.5	74.7	0.2	94	2	56	30+										0	
HIGHTSTOWN 2 W	84.6	63.3	74.0	1.0	95	2	52	23	5	0	17	0	19.29	15.05	12	7.89	28	0	
INDIAN MILLS													19.57	14.70	16	5.61	28	0	
MILLVILLE MUNI AP*	83.5	63.3	73.4	-0.5	94	8	54	31+										NM	
MOORESTOWN	83.6				92	1			1	0			16.91	12.31	16	5.20	28	NM	
NEW BRUNSWICK 3 SE	84.6	64.0	74.3	0.6	97	2	52	29	5	0	19	0	17.43	13.28	11	7.96	28	0	
SEABROOK FARMS	85.1	67.4	76.2	0.8	95	2+	58	31	5	0	22	0	24.28	20.17	10	10.64	15	0	
SOMERDALE 4 SW	84.0	63.0	73.5		97	1	53	30+	5	0	14	0	18.18	14.22	14	8.60	28	NM	
ATSION	83.2	63.3	73.2		91	2	54	31+	3	0	17	0						NM	
TRENTON MERCER CO	84.7	66.1	75.4	1.5	98	1	56	29	4	0	20	0	16.10	12.00	12	4.67	14	NM	
PHILADELPHIA MT HO	84.3	64.6	74.5		95	2	56	31+	4	0	20	0	15.03		12	5.83	28	0	
-DIVISION-			74.4	0.6									17.00	12.70					
-NJ: COASTAL-																			
ATLANTIC CITY	79.7	70.8	75.2	0.2	90	9	64	23	1	0	30	0	9.37	5.45	9	5.11	28	0	
BRANT BEACH HVN *	82.3	70.0	76.2	0.9	88	9+	64	24+										NM	
CAPE MAY 2 NW *	84.8	66.2	75.5	0.4	94	8	54	31										0	
-DIVISION-			75.6	1.2									9.37	5.27					
-STATE-			74.1	1.0									16.74	12.51				0	

*= One to four days of missing temperature data + = This value also occurred on one or more previous dates this month.
All means are for the years 1981-2010. NM = Snowfall is not measured.
These data are considered preliminary, published data from the National Climatic Data Center may differ somewhat from the values shown here.

PRELIMINARY MONTHLY DEGREE DATA AUGUST 2011

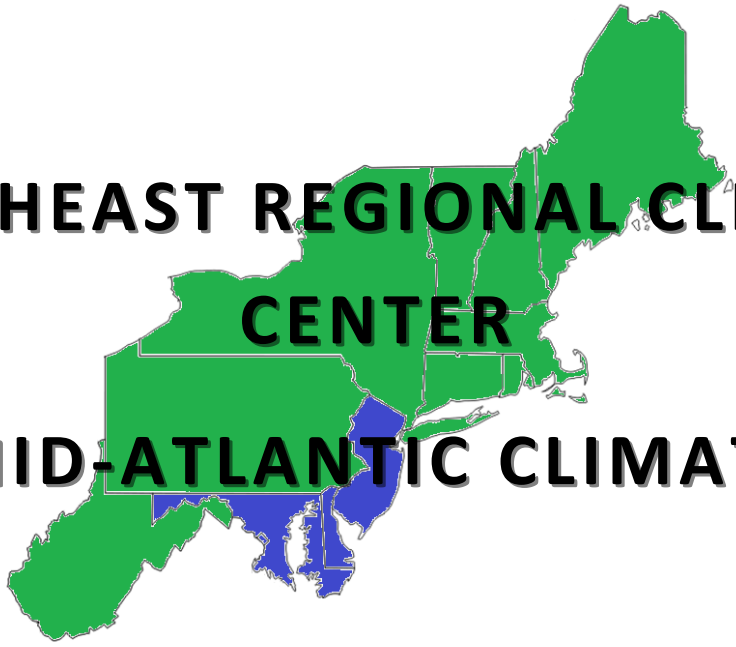
STATION	HEATING DEGREE DAYS (BASE 65)				COOLING DEGREE DAYS (BASE 65)				GROWING DEGREE DAYS (BASE 50)			
	MONTH	MONTH	SEASON	SEASON	MONTH	MONTH	SEASON	SEASON	MONTH	MONTH	SEASON	SEASON
-DE: NORTHERN-												
BEAR 2 SW	0	-1	0	-1	282	-12	1122	212	747	-11	3089	353
WILMINGTON NEW CAST	0	-2	0	-2	319	3	1245	252	784	4	3226	363
WILMNGTON PORTER RS	0	-2	0	-2	298	0			763	2		
-DE: SOUTHERN-												
DOVER	0	-1			356	11			821	12		
-MD: SOUTHEASTERN SHORE-												
SALISBURY WICOMICO	0	-1	0	-2	375	67	1439	456	840	68	3500	621
-MD: CENTRAL EASTERN SHORE-												
-MD: CENTRAL EASTERN SHORE-												
-MD: LOWER SOUTHERN-												
MECHANICSVILLE 5 NE	0	-3	0	-3	280	7	1075	187	745	10	3049	250
SOLOMONS	0	0	0	0	427	10			892	10		
-MD: UPPER SOUTHERN-												
BALTIMORE WASH INTL	0	-1	0	-1	346	30	1385	375	811	31	3426	526
BELTSVILLE	0	-2	0	-2	360	24	1310	243	825	25	3323	356
DALECARLIA RSVR	0	-2	0	-2	376	8	1419	220	841	10	3507	317
BALTIMORE DOWNTOWN	0	0	0	0	488	56			953	56		
OXON HILL	0	0	0	0	387	18	1400	211	852	18	3454	261
UPPER MARLBORO 3 NN	0	-3	0	-3	352	38	1332	298	817	41	3350	407
-MD: NORTHEASTERN SHORE-												
STEVENSVILLE	0	0	0	0	387	40	1399	348	852	40	3437	466
-MD: NORTHERN CENTRAL-												
CATOCTIN MTN PK	3	-6			213	0			675	6		
CYLBURN	1	-3	1	-6	243	-5			707	-3		
DAMASCUS	0	-5	0	-6	283	31			748	35	3056	405
EMMITSBURG 2 SE	2	-4	2	-5	243	-3	933	173	706	1	2825	282
FREDERICK 2 NNE	0	-2			337	30			802	32		
SMITHSBURG	3	-2			228	-26			690	-24		
WESTMINSTER POL BRK	1	-4	1	-5	291	27			755	31		
-MD: APPALACHIAN MOUNTAIN-												
FROSTBURG 2	17	-15	18	-33	142	23	520	154	590	38	2243	303
SHARPSBURG 5 S	1	-4	1	-5	270	25	952	184	734	29	2851	282
-MD: ALLEGHENY PLATEAU-												
OAKLAND 1 SE	24	-13	31	-29	125	27	437	137	566	40	2149	309
-NJ: NORTHERN-												
BOUND BROOK 2 W	0		0		327		1196		792		3114	
CHATHAM 2 W	1	-5			243	-12			707	-7		
CRANFORD	0	-4	0	-5	298	32			763	36		
NEWARK INTL AP	0	-1	0	-1	377	41	1349	315	842	42	3323	436
PLAINFIELD	0	-3	0	-4	362	66	1208	292	827	69	3113	367
POTTERSVILLE 2 NNW	3				194				656			
WAYNE	0		0		299		1115		764		3012	
TOCKS ISLAND	4		4		187		722		648		2521	
-NJ: SOUTHERN-												
ATLANTIC CITY INTL	0	-3	0	-3	335	40	1250	341	800	42	3229	522
ESTELL MANOR	0	-2	0	-3	299	23	1127	274	764	25	3082	425
HIGHTSTOWN 2 W	1	-5	1	-7	286	34			750	39		
NEW BRUNSWICK 3 SE	2	-1	2	-2	296	23			759	24		
SEABROOK FARMS	0	-1			357	32			822	33		
SOMERDALE 4 SW	2		2		274		1129		737		3024	
ATSION	0		0		263				728			

STATION	HEATING DEGREE DAYS (BASE 65)				COOLING DEGREE DAYS (BASE 65)				GROWING DEGREE DAYS (BASE 50)			
	MONTH	MONTH	SEASON	SEASON	MONTH	MONTH	SEASON	SEASON	MONTH	MONTH	SEASON	SEASON
TRENTON MERCER CO A	0	-3	0	-3	330	51	1241	385	795	54	3219	573
PHILADELPHIA MT HOL	0		0		299		1081		764		2999	
-NJ: COASTAL-												
ATLANTIC CITY	0	-1	0	-1	327	18	1026	179	792	19	2895	275

The heating season begins July 1 and ends June 30. The cooling season begins January 1 and ends December 31. The growing season begins March 1 and ends October 31. All departures are calculated from the 1981 - 2010 mean. These data are considered preliminary, published data from the National Climatic Data Center may differ somewhat from the values shown here.

NORTHEAST REGIONAL CLIMATE CENTER

MID-ATLANTIC CLIMATE



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