

Weather of 2012: Record Warmth, Variable Precipitation, Severe Storms and Superstorm Sandy

Every year, the weather seems to get warmer and wilder. 2012's weather involved record warmth for most of the United States and several disastrous weather events across the country. These ranged from devastating droughts and forest fires in the central and southwestern U.S. to violent thunderstorms with derechos and tornadoes in the Midwest and Mid-Atlantic to Superstorm Sandy. Sandy destroyed parts of the east coast from New Jersey to New England with historic storm surge flooding and winds near 100 mph. Sandy's impact and damage rivaled Katrina in 2005 and the March 1993 Superstorm.

The first three months of 2012 went in the record books as the warmest start to a year in recent history. Temperatures averaged around 5 degrees above normal during the winter months of December 2011 and January and February 2012. Snowfall during these three winter months was woefully below normal – about 50% of the previous 8 years' average. January had a few characteristically chilly days but otherwise felt more like a typical March. Frequent frontal passages led to brief cold snaps following long stretches of unseasonably mild weather. Precipitation – mostly rain – was above normal and fell frequently, in moderate amounts, throughout the month. January was very windy, with many days seeing gusts over 40 mph. These winds caused minor damage in the area.

February was nearly a carbon copy of January, beginning and ending with strong cold fronts preceded by temperatures in the 50s. Temperatures again were nearly 5 degrees above normal. Also, a similar amount of snow fell, although far less precipitation fell, except on the 29th, when a powerful storm dropped widespread heavy rains, with strong thunderstorms and some flooding south of Cambria County.

March brought record-shattering warmth and an unusual number of early-season thunderstorms. The middle of March felt more like May. Every day from the 11th-23rd, a 13-day streak, reached the 60s or 70s, with a record high of 80 on the 23rd. A cold front brought relentless thunderstorms early on the 24th, when nearly 2 ½ inches of rain fell, pushing precipitation above normal for an amazing 8th consecutive month, and ended the record warmth. Still, it was the warmest March ever, with temperatures above *April's* average! Also, there were 7 days with thunder, several with multiple thunderstorms.

For the first time I can remember, April was literally colder than March. Temperatures were fairly mild but ended up slightly below normal for only the 2nd time in the past 15 months. Temperatures plunged from 84 on the 16th to 33 on the 23rd, when an unusually late-season Nor' Easter dumped 6.7" of heavy, wet snow here in Westmont. Snow totals were very elevation-dependent. Over a foot fell on top of Laurel Ridge 4 miles west. This was the month's only major precipitation event – April was dry.

Near-record warmth returned in May, as did scattered strong to severe thunderstorms. With the exception of the 2nd week, which was cool and wet, May's temperatures were more typical of June. 2012 had another hot, humid Memorial Day weekend with locally severe thunderstorms. On the evening of the 27th, a squall line brought damaging winds, and a second storm dumped over 3 inches of rain on the north and east sides of Johnstown, causing flash flooding. Less than an inch of rain fell on this station. Another fast-moving line of storms caused minor wind damage again on the 29th.

Johnstown dodged major severe weather bullets in June. Around 5 p.m. on the 1st, an EF-1 tornado hit Ligonier, about 12 miles to our west. Another small twister touched down in Bedford Co. to our SE. Region-wide, dozens of tornadoes were sighted.

After a violent first day, June was quiet and rather dry. Temperatures were actually somewhat cool, until a brutal heat wave brought all-time record June highs to much of the state on the 29th. Here, a high of 93 was recorded. That evening, the most violent serial derecho since 1991 – with imbedded tornadoes – passed narrowly south of Johnstown. We again barely escaped the mayhem with winds only gusting near 30 mph.

For the 3rd consecutive year, July had near-record heat. The heat wave that began June 29th continued through the first two weeks of July. Many who lost power in the derecho suffered with no air conditioning for much of this period. The hottest readings at this location were 91 and 93 on the 6th and 7th, respectively.

Numerous thunderstorms, some severe, drenched the area in July. Nearly 2" of rain fell from intense thunderstorms on the 3rd and early on the 4th. An isolated storm dropped nearly an inch of wind-driven rain on the evening of the 15th. Heavy thunderstorms dropped nearly 2 ½ inches of rain from the 18th-21st. On the 26th, a severe thunderstorm snapped and uprooted trees throughout Westmont, knocked out power to thousands and flooded roads and basements with 2.30" of rain, most of it in only an hour. More thunderstorms swept through the evenings of the 27th and 28th, and an isolated storm the morning of the 31st dumped nearly an inch of rain in only 15 minutes, along with 5 minutes of dime-sized hail. A whopping 9.69" of rain was recorded in July.

August continued the alternating pattern of wet and dry months and was quite dry with only 2.14" of rain, despite numerous thunderstorms in the area. Temperatures were much more tolerable than in July, and there was a lack of extreme heat and/or humidity.

September predictably returned to a wet weather pattern. The month began very warm and humid, with scattered showers and storms from the remnants of Hurricane Isaac. The balance of the month actually had below normal temperatures. 1.42" of rain fell on the 18th and 2.04" of rain fell the 26th-27th, pushing precipitation above normal.

Despite an early freeze on the 8th of October and frost on the 11th, much of October was mild with little rainfall. Temperatures soared to 80 on the 25th. But it turns out this was the calm before what turned out to be a storm for the record books.

Hurricane Sandy paralleled the eastern U.S. coast during the final week of October, after battering the Caribbean, where nearly 100 deaths were reported. While the jet stream steers most tropical systems away into the northern Atlantic, an unusually large high pressure system in this region steered Sandy back to the northwest, taking dead aim on the highly populated coast of New Jersey.

Meanwhile, a strong cold front accompanied by unseasonably cold air approached from the Midwest. This front collided with Sandy in "perfect storm" fashion to produce a "Superstorm" that rivaled the March 1993 blizzard and Hurricane Katrina in 2005. Record storm-surge flooding devastated New Jersey, New York City, Long Island and southern New England. Tremendous amounts of rain over 10" fell around the Delmarva, with widespread heavy, flooding rains stretching well inland. A crippling blizzard hit the central and southern Appalachians, with up to 3 feet of wind-driven snow in parts of WV. At this location, 3.2" of snow and 4.83" of total precipitation fell the final 3 days of October. Damaging winds, sleet and thunder-snow were observed at this station. A record low barometer of 28.83" was recorded, beating 28.88" on March 13, 1993.

Perhaps Superstorm Sandy used so much energy that there wasn't enough left to fuel a storm of any consequence in November. Once Sandy dissipated at the beginning of the month, sunshine was abundant, and consistently cold, clear nights led to below normal temperatures. A record low November precipitation total of only 0.67" fell.

Yet again, a dead weather pattern turned very stormy. Precipitation fell almost constantly in December. Moderate to heavy amounts of rain, occasionally mixed with sleet or freezing rain, were common throughout the month. Temperatures were very mild, with a balmy 66 recorded on the 4th. Low temperatures were actually warmer than in November, with less sub-freezing readings as well. However, winter arrived on cue – on the 21st, the day of the solstice. Four winter storms affected the region in the final 10 days of 2012, leading to a White Christmas and New Year 2013. The heaviest of these storms dropped 8.2" of snow and ice in a 24-hour period ending December 26th. Despite the late winter blitz, temperatures in December and in 2012 were well above normal – yet again.

2012 Westmont/Johnstown Area Weather Statistics

2012 Monthly and Annual Climate Summary											
Westmont 1 W, PA, Cambria County											
Observer Nate Mullins											
Station Observation Time: Midnight											
Lat: 40.317°, Long: - 78.974°, Elevation 1909'											
Temperature, ° F									Number of days		
Month	Mean Max	Mean Min	Mean Temp	Departure	Max Temp	Date	Min Temp	Date	Max ≥ 90	Max ≤ 32	Min ≤ 32
Jan	38.4	22.9	30.7	4.8	57	31	4	4	0	9	26
Feb	40.4	26.4	33.4	4.9	55	27*	10	12	0	5	26
Mar	59.5	38.0	48.7	11.3	80	23	15	6	0	1	13
Apr	59.2	37.0	48.1	-0.3	84	16	29	13	0	0	11
May	74.9	53.5	64.2	5.5	87	26	38	11	0	0	0
Jun	76.9	55.4	66.2	-0.5	93	29	46	5	1	0	0
Jul	82.8	62.9	72.8	2.1	93	7	55	30*	2	0	0
Aug	78.5	57.9	68.2	-0.8	86	3*	49	30	0	0	0
Sep	68.8	51.4	60.1	-2.3	83	7	36	25*	0	0	0
Oct	59.3	42.5	50.9	-0.1	80	25	27	13	0	0	4
Nov	45.3	29.0	37.2	-3.9	70	11	24	25*	0	1	25
Dec	42.0	29.5	35.7	5.4	66	4	18	13	0	6	21
Year	60.5	42.2	51.4	2.2	93	7/7*	4	1/4	3	22	126

Precipitation, Inches					Number of days				Snow/ice, Inches		
Month	Total Precip	Departure	Max Day	Date	> 0.01"	> 0.10"	> 0.50"	> 1.00"	Total Snow	Max Day	Date
Jan	5.07	1.26	0.82	11	18	13	4	0	17.8	3.7	14
Feb	3.43	0.01	1.22	29	16	11	2	1	16.3	4.5	11
Mar	4.81	0.94	2.14	24	13	8	2	1	3.5	1.9	4
Apr	2.37	-1.44	1.13	23	12	7	1	1	8.1	6.6	23
May	5.01	0.70	1.32	8	16	10	4	1	0.0	-	-
Jun	2.80	-2.06	0.82	12	10	6	1	0	0.0	-	-
Jul	9.69	4.58	2.30	26	15	14	7	3	0.0	-	-
Aug	2.14	-1.96	0.79	10	9	6	1	0	0.0	-	-
Sep	5.53	1.38	1.42	18	16	9	4	2	0.0	-	-
Oct	6.63	3.36	3.13	29	15	10	3	2	3.2	1.8	31
Nov	0.67	-2.98	0.22	1	9	2	0	0	1.8	1.1	24
Dec	6.87	3.54	1.14	7	23	12	5	1	19.2	7.3	26
Year	55.02	7.33	3.13	10/29	172	108	34	12	69.9	7.3	12/26
Note: * = also occurred on earlier dates that month											
Special Obs - Number of days with:							Monthly summary comments				
Month	Fog	Sleet	Glaze	Thunder	Hail	Dmg wind					
Jan	6	6	1	0	0	2	Mild, wet, windy, little snow				
Feb	5	5	0	0	0	0	Mild, average precip, little snow				
Mar	7	1	0	7	1	1	Record warmth, many t-storms				
Apr	3	4	0	1	0	0	Drier, variable temps, late snow				
May	9	0	0	7	0	1	Very warm, some strong t-storms				
Jun	6	0	0	6	0	1	Dry, hot late, derecho mere miss				
Jul	9	0	0	13	1	1	Hot, severe & drenching t-storms				
Aug	8	0	0	9	0	0	Seasonable temps, drying out				
Sep	1	0	0	4	0	0	Somewhat cool, frequent rains				
Oct	8	1	0	1	0	1	Avg. temps, *Superstorm Sandy*				
Nov	0	1	0	0	0	0	Very dry, chilly temps, light snow				
Dec	11	4	2	0	0	0	Mild, very wet, late winter storms				
Year	73	22	3	48	2	7	Record warmth, big storms!!!				