

2018 WEATHER SUMMARY

West Henrico Co. – Springfield
Park, Glen Allen, Virginia

THE MOST UNUSUAL RECORDS

2nd Wettest Year

Springfield Park's total precipitation for the year was 67.49 inches, a new ten-year record for the station. Both spring and autumn were the wettest on record and summer was in second place. The months of May, June, September and October were all the wettest on record for this station. May with 11.64 inches was not just the wettest May but the wettest of all months. May 18th had 5.09 inches of rain making it the wettest day on record for the station.

The Richmond International Airport's total precipitation for the year was 63.73 inches making it the 2nd wettest year since 1872. (The earliest precipitation records from 1872 to 1886 were kept by the Richmond Fredericksburg and Potomac Railroad Company and were under the direction of Major Edmund Trewbridge Dana Myers, (b. 1830 d.1905) president of the company.) The 7.61 inches recorded at the Airport on June 22nd was second only to August 12, 1955 when Hurricane Connie brought 8.79 inches of rain. The one-hour total between 3:54 AM and 4:54 AM was 4.09 inches, an unprecedented rate of rainfall at the Airport. The May total was 10.35 inches, a departure of 6.57 inches. June with 13.32 inches was a 9.39-inch departure.

Hurricane Florence

September 17th was Henrico's day to deal with Florence. Florence was located at Lat. 39° North Long. 81° West in western West Virginia but we were on the east side of the storm that generated a string of thunderstorms that trained over our area. We were in the warning cone for tornadoes twice and on the edge of the 3rd. My daughter-in-law had just gotten home from school and soon found they were in a tornado warning cone. The NWS even mentioned their street as being in the path of a tornado. They were in the downstairs bathroom with couch cushions and a flashlight in case the power went out. I was concerned as it was the most tornado activity in this area since Hurricane Ivan in 2004. We got torrential rains and had 3.03 inches and a lot of heavy lightning and very loud thunder but we didn't see any funnel clouds or tornadoes here luckily. A music teacher thought she heard the winds of a funnel just east of our granddaughter's school a little after 3 PM. The tornado on Hull Street SW of us was at least an F2 and one person was killed. Henrico Schools kept the children until 8PM since it was not safe to be on the roads.

Heavy December Snow

The Richmond International Airport had 11.5 inches of snow on December 9, 2018 which was the second heaviest single-day December snowfall on the Richmond records. The record was on December 22, 1908 when 15 inches occurred. The Dec 9th snowfall total also makes December the 6th snowiest December on record. December snowfall totals are-

1st -1908 17.2 inches, 2nd -1917 15.3 inches, 3rd -1958 12.5 inches, 4th -1935 12.3 inches, 5th -1966 12.2 inches, 6th -2018 11.5 inches.

The snow started at 7:35AM and lasted until 2100 hours and was all snow with a liquid equivalent of 1.16 inches. The maximum snowfall rate was about 2 inches per hour from 3:05 PM to 3:30 PM. This was also Richmond's 12th largest snowstorm since 1897. The models did not predict the high snowfall totals but predicted the storm a week in advance. To see pictures of this storm, click on the link below -----
<https://photos.app.goo.gl/rhkxa16bLTjK13J87>.

This was also Richmond's 12 largest snowstorm since 1897 and the 7th largest single day storm. (Ref. See the Chart of the 25 Greatest Snowstorms)

(Ref. Springfield Park Station) See pictures of this snowstorm

(Ref. Springfield Park Station) See hourly observations for this snowstorm

(Ref. Springfield Park Station) See video taken around 3 PM of the 9th during the snowstorm.

4th Hurricane Michael

Hurricane Michael was a historic hurricane on several counts - Hurricane Michael made landfall Wednesday Oct. 10th as an unprecedented high-end Cat. 4 Hurricane (on the Saffir-Simpson Scale) along the Florida Panhandle region with a maximum sustained wind speed of 155 mph at landfall and a minimum air pressure of 919 mb (27.14 inches of mercury). In terms of central barometric pressure, Michael was the third most powerful hurricane to strike the U.S. mainland, ranked behind the unnamed Labor Day Hurricane of September 1935 (892 mb) and Hurricane Camille (900 mb) in August 1969. However, Michael's central pressure was the lowest on record for any October hurricane to strike the United States. In terms of maximum sustained wind speed at landfall, Michael was the fourth strongest, behind the Labor Day 1935 hurricane (184 mph), Hurricane Camille (172 mph) and Hurricane Andrew in 1992 (167 mph). Michael is the first Cat. 4 hurricane on record to make landfall on the Florida Panhandle. On Oct. 11th, Springfield Park received 4.03 inches of rain from Hurricane Michael. -----

[LINK----](#) Statistics and Images of Hurricane Michael

Thunderstorms

The strongest thunderstorm, category 5, was on September 17, 2018 was rated so high mainly because of the tornadoes associated with the storm that passed just to the east of the station. Thunder was heard on 44 days in 2018 at Glen Allen. The average is 35 days per year. Only 2012 with 47 days with thunder topped 2018 with 44 days. September had 9 thunder days which was the greatest for one month in 2018 but only 2 were strong. Most were weak as 29 of the 44 were rated as category one the weakest. Cat. 1 may have had only one thunder heard. The May 10, 2018 storm was rated a 4 because of the 0.5-inch hail that lasted 4 minutes. The May 14, 2018 storm was rated 4 because of its 47 mph winds. The September 1, 2018 storm was rated 4 because of much lightning and heavy rain.

29 (Cat. 1),

7 (Cat. 2),

4 (Cat. 3),

3 (Cat. 4),

1 (Cat. 5)

Temperature

YEAR- The mean temperature for 2018 at Glen Allen was 59.58°F which was near the average of 59.24°F. The warmest year at the Springfield Park station was 2012 with a mean average of 60.52°F. The Richmond International Airport had a mean of 59.9°F for 2018 which is near the average for the year of 58.9°F. Glen Allen had 50 days that the maximum temperature was $\geq 90^\circ\text{F}$ and the average is 43.3 days, only 2012 and 2016 had more. Springfield Park had 70 night-time minimums which stayed 70°F or above. The average is 47 days; the previous record was 2010. The maximum temperature at Glen Allen was $\leq 32^\circ\text{F}$ for the high temperature only seven times. Springfield Park had 88 days when the minimum temperature was $\leq 32^\circ\text{F}$, the average is 78.2 days. The lowest minimum temperature of 2018 was -1.4°F on January 7th.

SEASONS-

Spring was the wettest on record and 3rd coolest on record with a temp. departure of -1.3°F .

Summer was the second wettest on record and 4th coolest on record with a temp. departure of 0.2°F .

Autumn was the wettest on record and 5th warmest on record with a temp. departure of 0.7°F .

Winter of 2017-2018 was the 3rd driest on record 5th warmest on record with a temp. departure of 3.2°F . This was because the warm Feb. 2017 had a $+6.5^\circ\text{F}$ departure.

MONTH-

Negative departures-

The coldest month for 2018 was January with a mean temperature of 35.8°F. January also had the greatest number of days (21) with the minimum temperature $\leq 32^\circ\text{F}$. The -1.4°F minimum on January 7th was a new record low minimum temperature for the month; the previous record was 2.5°F in 2017. March had the greatest negative departure from average of -5.9°F and April took 2nd place with a -3.7°F departure. April's mean temperature was 55.66°F the coldest April on record; the previous record low was 55.73 in 2012. November set a new record low average maximum temperature of 55.2°F; the previous record was 56.5°F in 2008. April set a new record low average minimum temperature 43.5°F; the previous record average was 44.3°F set in 2012. August had a new record minimum temperature on the 24th of 55.8°F; the previous record low for August was 56.0 set in both 2013 and 2014.

Positive departures-

February's mean temperature was the greatest positive departure from normal $+6.5^\circ\text{F}$. May had the second greatest positive departure of 5.6°F. The months of Feb, May, and Sep. were all warm months at Springfield Park. May's mean of 73.7°F made May the warmest on record; the previous record was 70.5°F set in 2015. May also set a new record-high minimum temperature average of 62.9°F; the previous record was 60.2°F set in 2012. September's mean was 75.8°F and was the warmest September on record; the previous record was 74.6°F set in 2016. August had 18 days with the maximum temperature $\geq 90^\circ\text{F}$ which was the greatest number for any month in 2018 and had 21 nights that the minimum temperature was 70°F or more. Only 2016 had more hot nights with 22 nights in August. September also set a new record high minimum temperature of 56.8°F; the previous record was 56.6°F set in 2016. The warmest minimum temperature for the year was 77°F on July 3rd. The number of days that the minimum temperature was $\geq 70^\circ\text{F}$ in 2018 was 70 days which is a new record of days and the average is 47 at Springfield Park. October 4, 2018 set a new record high maximum for October of 91.2°F; the previous record was 90 in 2013. May set a new average maximum of 84.4°F; the previous record was 81.3°F in 2015. February 21, 2018 set a new record high minimum of 61°F; the previous record was 57°F in 2017. February's average minimum of 37.0°F set a new record high; the previous record average was 36.7°F set in 2017. November 2, 2018 tied the record high minimum of 65°F; the previous record was in 2014.

DAY-

The hottest temperature of 2018 at Springfield Park was 97.4°F that occurred July 2nd. There were two other 97°F days but they were a few tenths of a degree lower. The average highest annual maximum temperature for this station is 99.2°F. The lowest minimum temperature for 2018 at Springfield Park was -1.4°F recorded on January 7, 2018. The hottest day was July 3rd with a daily mean of 86.5°F and the coldest day of the year occurred on January 7th with the daily mean temperature of 12.7°F.

RANGE-

The **greatest** temperature range for the year at Springfield Park was 42.6°F, which occurred on May 1st with a high of 83.8°F and a low of 41.2°F. The **smallest** temperature range for the year at Springfield Park was 2.4°F, which occurred on December 1, 2018 with a high temperature of 43.7°F and a low temperature of 41.3°F. The **maximum monthly range** was 75°F for January 2018; only March 2009 was higher with a 76°F range. Spring had the highest average temperature range of 22.4°F and the autumn had the lowest temperature range of 17.9°F. April had the highest average range of 24.3°F and September had the lowest average range of only 15.6°F.

PRECIPITATION

YEAR-

The total number of days this year with measurable precipitation at Springfield Park was 149 days, a new record for Springfield Park; the previous record was 137 in 2013 and the average is 128.1 days. Springfield Park's total precipitation was 67.49 inches. The ten-year average annual precipitation for Springfield Park is 45.53 inches or a positive departure of 21.96 inches. The total precipitation for 2018 at the Airport was 63.73 inches. The average annual precipitation for Richmond is 43.60 inches or a positive departure of 20.13 inches.

Season-

The Spring season was the wettest on record with 17.96 inches; the previous record was 15.19 inches in 2014 and the average is 11.64.

The Summer season was the second wettest on record with 17.53 inches; the previous record was 19.75 inches in 2013.

The Autumn season was the wettest on record with 21.07 inches; the average is 11.21 inches. The autumn season set a new record of 39 days with measurable precipitation; the previous record was 35 days in 2009. Autumn was the only season to break the number of precipitation days in the season even though 2 of the seasons had record precip. amounts.

The winter season of 2017-18 was the third driest on record.

MONTH-

Both August and September had 18 days with measurable precipitation, which was the most of any of the months of 2018 and both were new records for Springfield Park. There were 96 days with a daily precipitation amount ≥ 0.10 inches. There were 18 days with daily precipitation amount ≥ 1.00 inch and 5 days with more than 2.00 inches; the previous record was 3 days in 2008. February set a new record of 14 days with measurable precipitation; the previous record was 13 days in 2012.

Four months of 2018 set new precipitation records for the month.

May was the wettest May with 11.64 inches but was also the wettest of all months for Springfield Park; the previous record for May was 8.55 inches in 2016.

June with 8.54 inches was the wettest June on record; the previous record was 8.35 inches in 2015.

September was the wettest September on record with 8.54 inches; the previous record was 6.69 inches in 2016. September set a new record of 18 days with measurable precipitation; the previous record was 13 days in 2016.

October with 6.41 inches of precipitation was the wettest October on record; the previous record was 5.82 inches in 2017.

CALENDAR-

The most precipitation recorded in a day occurred on May 18, 2018 with 5.09 inches which was the greatest May rainfall on record and also a record for all the months. The previous record was 2.39 inches in 2013. The 4.03 inches on October 11, 2018 was a new October calendar day rainfall record; the previous record was 2.81 inches in 2016. The 4.03 inches precipitation in October was also the second most rain in a calendar day for any month.

24-HOUR PERIOD-

The maximum precipitation in a 24-hour period for 2018 was 6.10 inches on May 17 - 18, 2018. The previous record for Springfield Park is only 3.83 inches that occurred on August 27-28, 2011 during Hurricane Irene. On June 2 and 3, 2018 Springfield Park had 3.87 inches which is a new record for June; the previous 24-hour record was 2.29 inches on June 3 and 4, 2009. On October 11, 2018 Springfield Park had 4.03 inches of rain in 24 hours due to Hurricane Michael; the previous 24-hour record for October was 3.43 inches in 2016.

HOUR-

The greatest one-hour rainfall intensity during 2018 was 2.63 inches on June 2nd; the previous June record was 2.13 inches in 2009. The 2.63 inches in one-hour is now the record for all of the months. The second greatest one-hour rainfall intensity during 2018 was 2.13 inches on October 11th; the previous October record was only 1.05 inches in 2017. The third greatest one-hour rainfall intensity during 2018 was 1.83 inches on May 18th; the previous May record was only 1.06 inches in 2012.

Five-Minutes-

The greatest five- minute rain in 2018 was 0.53 inches on June 2nd; the previous June record was 0.48 inches in 2009.

The second greatest five-minute rain in 2018 was 0.30 inches on September 17th; the previous September record was only 0.28 inches in 2011.

The third greatest five-minute rain in 2018 was 0.20 inches on April 16th; the previous April record was only 0.19 inches in 2013.

DROUGHT-

There was no real drought, only some dry periods during 2018. The longest dry period of 2018 without measurable rain was 11 days from April 29th to May 9th, and June 25th to July 5th. There were two ten-day periods with no measurable rain from March 27th to April 6th, and September 29th to October 8th. The monthly precipitation has been above average for nine consecutive months in 2018 from April through December.

WIND

YEAR-

The highest wind gust for the year was 47 mph from the NNW that occurred on May 14, 2018 at 1929 hours in a strong thunderstorm. This was the highest wind at Springfield Park since 6-25-2012 when a 47 mph gust also occurred in a thunderstorm. The total wind run for the year was 24,875 miles, a new yearly record for Springfield Park.

MONTH-

The windiest month in 2018 was April with a wind run of 3162 miles. This was the windiest of all months on record at the Springfield Park Station. June was the month with the least wind of 1487 miles. The highest average wind run for a month was 105.4 miles that occurred in April. The average for April is 77.5 miles. April also had the highest average maximum wind gust of 22.2 mph and the next highest month was March with 20.7 mph.

DAY-

The windiest day for 2018 was on March 2, 2018 with a wind run of 237.2 miles. This was also the highest daily wind run recorded at Springfield Park since January 17, 2012 when 247 miles was recorded.

The second windiest day was April 13, 2018 when a wind run of 214.1 miles was recorded. The record wind run for Springfield Park during a calendar day was 284.1 miles set during Hurricane Irene on August 27, 2011.

SNOW

YEAR-

The 2018 Springfield Park total snowfall was 22.9 inches and the total for the winter (2017- 2018) was 16.2 inches. There were 9 days (average is 9.8 days) during 2018 that Springfield Park had measurable snowfall and the December 9th snow was the largest snowfall to occur in one calendar day at the Springfield Park Station. There were 14 days in 2018 with more than a trace of snow on the ground at sunset. The maximum snow on the ground at sunset during 2018 was 9.0 inches on December 10th.

MONTH-

The greatest monthly snowfall total for Springfield Park in 2018 was 12.0 inches in the month of December which averages 2.9 inches.

STORM-

The most snow to fall in any one storm was 11.9 inches that occurred on December 9th. The greatest snow in a calendar day in 2018 was also 11.9 inches on the same date.

BAROMETRIC PRESSURE

YEAR-

The highest barometric pressure recorded for the year was 30.81 inches of mercury on February 13, 2018. The lowest barometric pressure for the year was 29.18 inches of mercury which was recorded on December 21st that was associated with strong eastern low pressure. This was the lowest barometric pressure since March 12, 2014 when the pressure dropped to 29.13 inches.

MONTH-

January had the highest average barometric pressure of any month in 2018 which averaged 30.25 inches and is a new record high for all months. (records since August 2008). This was caused mainly by a strong cold Artic high pressure over the area during the first half of January. June had the lowest average barometer reading of any month at 29.94 inches which was the lowest for June since 2011 when it was 29.92 inches of mercury.

RELATIVE HUMIDITY

YEAR-

The highest average relative humidity was recorded in September with an average relative humidity of 85.8%. April had the lowest average relative monthly humidity of 65.5% for 2018. The lowest daily relative humidity for the year was 18% recorded on January 19, 2018 and May 1, 2018. Feb, May, Jun, Jul, Aug, Sep, Oct, and Dec all set new record high relative humidity averages for the month. It was a very humid and damp year because of all the precipitation. The average for the year was 75.8% setting a record annual average. The average is 68.7% giving a departure of 7.1%. The previous record high average was 70.3% in 2013.

SKY COVER

The cloudiness average value is based on (0 as clear), (1 as partly cloudy), and (2 as cloudy).

MONTH-

2018 was the cloudiest year on record with a 1.20 average. The previous record was 1.17 in 2009 and the average for the year is 1.09 units. February with (1.54) was not only the cloudiest month of 2018 but is now the 2nd cloudiest month on record at Springfield Park. December was also very cloudy and averaged 1.34 units. January with (1.02) was the clearest month of 2018. The cloudiest season was the winter of 2017-2018 with the average 1.25; the normal is 1.09. Summer was 1.24 with a normal of 1.03. The fall season was 1.18 with the normal of 1.02. Spring was the clearest 1.15 with a normal of 1.11 units.

SEASON RECORDS

Springfield Park Winter – Dec. 2017 to February 2018

The winter of 2017-2018 was the fifth warmest and third driest on record for Springfield Park. February was the warmest with a +6.5°F departure and January also had a positive +2.9 departure. February was the 3rd warmest at the Richmond International Airport since 1897. December 2017 was the third coldest at Springfield Park. The winter season 2017-18 was above average because of the warm January and February. The total snowfall was only 9.5 inches during the winter months. December 2017 had 5.3 inches of snow, January 2018 had 4.2 inches and February 2018 had none for the first time at the Springfield Park Station.

Springfield Park Spring – March 2018 to May 2018

Spring was -1.3°F cooler than average and had the greatest negative departure for the four seasons. On May 10th hail as large as 0.5 inches caused damage to tomato plants. The first 90°F day came on May 2, 2018. Spring was the wettest on record with 17.96 inches. The previous wettest spring occurred in 2014 with 15.19 inches. The spring had 6.7 inches of snow with 0.5 inches in April. This is the first year we have had measurable snow in April. May had 11.64 inches of precipitation making it not only the wettest May but the wettest of all months.

Springfield Park Summer – June 2018 to August 2018

Summer was the fourth warmest on record with a 0.2°F departure and was the second wettest on record. The summer had 39 days of the year's fifty 90°F days. This was Springfield Park's most humid summer that averaged 9% above the ten-year average. Springfield Park had 8.43 inches of precipitation for June which made it the wettest June on record.

The Richmond International Airport's precipitation totals for both June and July set new records for both months. The one-hour total between 3:54 AM and 4:54 AM was 4.09 inches, an unprecedented rate of rainfall at the Airport. (Records since 1948) The 7.61 inches recorded at the Airport on June 22nd was second only to August 12, 1955 when Hurricane Connie brought 8.79 inches of rain.

Springfield Park Autumn – September 2018 to November 2018

Autumn was the 5th warmest on record with a 0.7°F departure and was the wettest fall on record with 21.07 inches of precipitation. The remnants of two hurricanes Florence in September and Michael in October affected the Springfield Park area. Both September and October set new maximum precipitation records for the month's precipitation in Springfield Park's ten years of records.

The Richmond International Airport's average mean temperature was 76.4°F for the month of September with a departure of +5.8°F making September the 4th warmest September since 1880 and the second warmest since 1897.

Annual Records

2018 was the wettest year on record at Springfield Park with a total of **67.49** inches, a **21.96** inch departure based on the 10-year average of 45.53 inches.

2018 was the 2nd wettest year on record for Richmond as the Richmond International Airport had **63.73** inches which was a **20.13** inch departure based on the 30-year average of 43.60 inches.

Springfield Park's 2018 annual temperature average was 59.58°F which was a +0.3°F departure from the 10-year average and the warmest year since 2012. The Richmond International Airport's 2018 annual temperature average was 59.9°F with a +1°F departure based on the 30-year average of 58.9°F.

In 2018 Springfield Park had the third greatest snowfall on record with 22.9 inches. The 10-year average is 17.1 inches or a departure of 5.8 inches. The largest yearly total was 36.7 inches in 2010 and the least snow of 1.8 inches fell in 2011. The December 9, 2018 snow of 11.9 inches at Springfield Park was the largest calendar snowfall on record.

The Richmond International Airport had 11.5 inches which was the 2nd largest snowfall in December since 1897. It was also the 12-largest snowstorm on record and the 7th largest one day snowfall since 1897.

The Richmond International Airport had 20.8 inches of snow in 2018 and its 30-year average is 10.3 inches, a positive departure of 10.5 inches. This is the greatest annual snowfall at the Airport since 2010 when 25.6 inches of snow was recorded.

Springfield Park in 2018 had a wind run of 21,656 miles, the windiest year in the past ten years. The average annual wind run at Springfield Park is 19,638 miles.

During the Year 2018 at Springfield Park there was a total of:

1 Day with Glaze

1 Day with Hail

2 Days with Sleet

9 Days with Measurable Snow

12 Days with Trace or More of Snow

38 Days with Fog

44 Days with Thunder

60 Days with Frost

146 Days with Dew

149 Days with Measurable Rain