

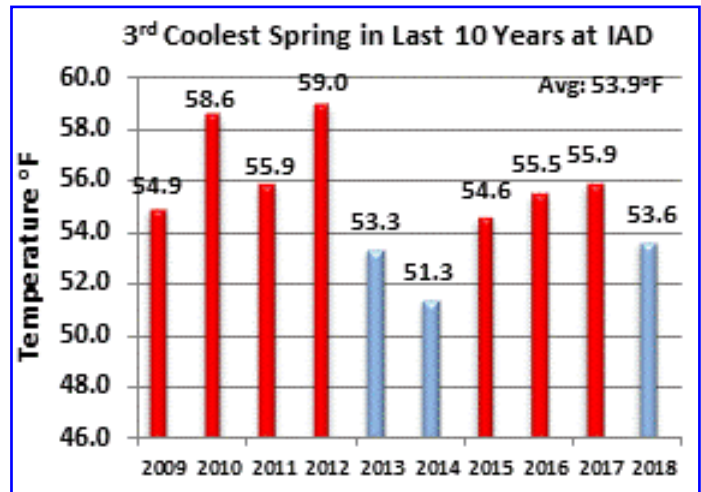
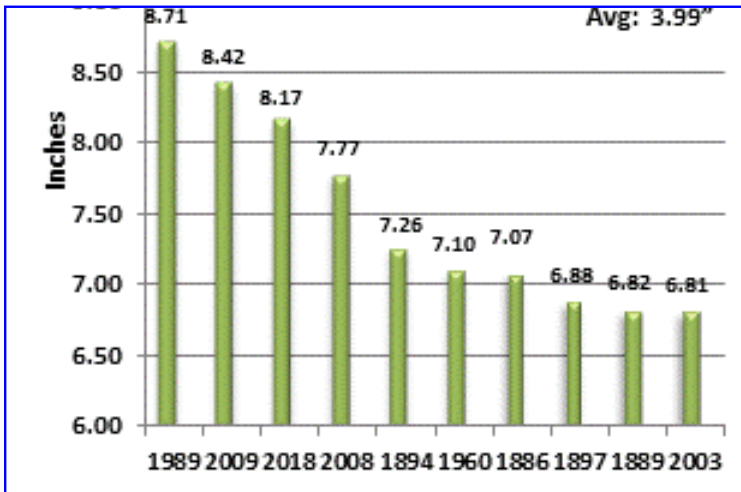


PRESTO

PREcipitation Summary and Temperature Observations
For the Washington, DC and Baltimore, MD Area



MAY 2018: Very Warm, Excessively Wet, Major Flooding in Frederick and Ellicott City, MD SPRING: Wet, Major Windstorm, Near Normal Temps



May Highlights

- Well above normal readings across the area: BWI, +6.7°F, DCA and IAD, +6.4°F;
- Month was 3rd warmest in Washington, 5th warmest in Baltimore and 2nd warmest at IAD
- Early season heat wave with readings at or above 90°F from the 2nd–4th at DCA and BWI and on the 3rd–4th at IAD. DCA set a record at 91°F on 2nd; BWI set daily records each day: 90°F, 92°F and 91°F; IAD equaled daily records on 2nd and 4th at 88°F and 90°F respectively
- Excessively wet with over 8" measured at the major airports and well over a foot across portions of northern Maryland.
- Monthly rainfall totals at the major airports: DCA, 8.73" (+4.74"); BWI, 8.17" (+4.18"); IAD, 8.92" (+4.37")
- On the 15th, severe flooding occurred across Frederick County, MD, when slow moving thunderstorms dumped torrential rainfall. Numerous roads were closed with vehicles floating in a parking lot. A passenger train between Brunswick and Point of Rocks had water up to the bottom step. Flooding also closed roads in Leesburg and in Purcellville (Loudoun County), VA. Tennis ball size hail was reported in Frederick. Radar estimated 5"–6.7" from southeastern Washington County through the city of Frederick, including an official total of 6.56" near Frederick
- On the 27th, for the second time in 3 years, (3rd major flood since 2011), devastating flash flood inundated historic Ellicott City, leading to the death of one person and major damage to homes and businesses. A state of emergency was declared in Howard County. The flooding was even more destructive than the July 2016 event according to press reports; multiple water rescues were reported. Downtown Catonsville also reported widespread flash flooding. Rainfall up to 10.38" was reported in Catonsville (Baltimore County) and 8.40" in Ellicott City (Howard County)

Spring Highlights

- Near normal temperatures: DCA, 57.0°F (+0.5°F), BWI, 54.0°F (+0.6°F), IAD, 53.6°F, (-0.3) and well above normal precipitation: DCA, 14.24" (+3.71"), BWI, 13.62" (+2.54") and IAD, 14.26" (+2.86")
- On March 2, a high impact wind storm resulted a long-duration event with strong and damaging winds. Gusts peaked at 71 mph at IAD, 62 mph at DCA and 61 mph at IAD. Outside the metro area, gusts were clocked at 78 mph in Etlan (Madison County), VA, and 71 mph at Ballenger Creek (Frederick County), MD. The winds knocked out power to nearly 500,000 customers, largely as a result of downed trees falling on power lines. One person was injured in Kensington, MD, when a tree fell onto a house causing significant structural damage. Most school systems and the federal government were closed and airlines cancelled a significant number of flights. The air traffic control tower at IAD was briefly evacuated during the period of peak gusts. The winds were the strongest in many areas since the June 29, 2012, derecho.
- On March 21, heaviest snowfall of the season, with substantial totals well north and west of the metro areas and generally between 4"-8" across the D.C.–Baltimore area. Highest amounts in Maryland included 17.5" near Sabillasville (Frederick County) and 13.1" in Norrisville (Harford County); in Virginia, greatest amounts included 12.0" in Staunton and 10.8" in Fishersville (Augusta County). Closer to the cities, amounts included 6.7" in Oakton (Fairfax County), VA, 7.4" in Baden (Prince Georges County), MD, and 4.1" at the National Zoo in Washington. Airport totals were a daily record 4.8" at IAD, 4.7" at BWI and 4.1" at DCA
- Significant rainfall event on April 15-16 with 1" to more than 4" observed in localized areas; totals in Virginia included 4.50" near Afton, (Nelson County), and 3.24" near Ravensworth (Fairfax County); in Maryland, totals included 3.52" in Potomac (Montgomery County), and 3.36" near Middletown (Frederick County); In Washington, 2.85" reported at the Dalecarlia Reservoir. Numerous roads were flooded, impacting transportation, and one person was rescued from a disabled auto in moving water near Chevy Chase (Montgomery County)

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May 2018

Temperatures: Well above normal readings: BWI, +6.7°F; DCA and IAD, +6.4°F. May was the 3rd warmest in Washington, 5th warmest in Baltimore and 2nd warmest at IAD. An early season heat wave caused maximum readings to soar at or above 90°F for the first time in 2018; the heat wave ran from the 2nd-4th at DCA and BWI and on the 3rd-4th at IAD. DCA set a record at 91°F on the 2nd; BWI set daily records each day: 90°F, 92°F and 91°F; IAD equaled daily records on the 2nd and 4th at 88°F and 90°F, respectively. Minimum temperatures remained at or above 70°F in the area on the 26th. For the month, DCA also set a record for a high minimum, while IAD tied or broke high minimum readings on three dates. The month was consistently warm with DCA observing 21 days at 80°F or greater, IAD, 19 days, including a daily record 90°F on the 12th and BWI, 17 such days.

Precipitation: The month was excessively wet with over 8" of rain measured at the three major airports and well over a foot across parts of northern Maryland. Monthly totals: DCA, 8.73" (+4.74"); BWI, 8.17" (+4.18"); IAD, 8.92" (+4.37"). May was the 6th wettest in Washington, and wettest since 2008; 3rd wettest in Baltimore and wettest since 2009 (see graphic); and 4th wettest at IAD and wettest since 2009.

The excessive rain resulted in severe flooding across northern Maryland during two events. The first event started on the evening of the 15th when slow moving thunderstorms dumped torrential rainfall on Frederick County. Numerous roads were closed and vehicles were floating in a parking lot. A passenger train was surrounded by floodwaters between Brunswick and Point of Rocks with water up to the bottom step of the train. Flooding also occurred across portions of Loudoun County, VA, leading to road closures in Leesburg and Purcellville. Tennis ball size hail was reported in Frederick. Radar estimated 5"-6.7" from extreme southeastern Washington County through the city of Frederick including 6.56" near the city. There were no reported injuries but numerous reports of flooded basements and vehicles and many parks in need of repair, according to press reports.

The second major flooding episode occurred the afternoon of the 27th when slow moving intense thunderstorms developed across northern Maryland. Rainfall amounts included 10.38" in Catonsville (Baltimore County) and 8.40" in Ellicott City (Howard County). For the second time in 3 years (3rd major flood since 2011), a devastating flash flood inundated the historic district of Ellicott City leading to the death of one person and major damage to homes and businesses. A state of emergency was declared for Howard County. The flooding was even more destructive than the July 2016 event according to press reports. Multiple water rescues were reported. Downtown Catonsville also reported widespread flash flooding. In Virginia, copious rainfall with additional flooding was reported in Calvert County with 4.35" reported in Prince Frederick and 3.50" in Sparkling Springs (Rockingham County), VA. Across the I-95 corridor, the area endured a very wet week from the 13th-19th, with measurable rainfall daily at all three major airports. It was the longest consecutive streak of precipitation in Washington on record with at least 0.41" reported daily. DCA set a daily record of 1.49" on the 14th, while BWI recorded two consecutive days greater than 1" with 1.63" on the 15th and 1.33" on the 16th.

IAD finished the month on a wet note with a daily record 2.35". Total rainfall during this time included 8.94" in Leonardtown (St. Mary's County), 8.40" in Crofton (Ann Arundel County), MD; and 8.36" in Purcellville, 7.94" in Rivercrest (Fairfax County), VA, and 7.43" at the National Arboretum in Washington, D.C.

May 2018 Weather Statistics for the Washington/Baltimore Area

| Location | Station Temperatures (°F) | | | | | Extreme/Day | | | Total | Nml | DepNml | Year to Date |
|-----------------|---------------------------|-------|------|------|--------|-------------|------|-------|-------|------|--------|--------------|
| | AvMx | AvMin | AvgT | NmlT | DepNml | Max | Min | Total | | | | |
| National (DCA) | 81.5 | 63.4 | 72.4 | 66.0 | 6.4 | 91/2 | 49/1 | 8.73 | 3.99 | 4.74 | 19.97 | |
| Baltimore (BWI) | 79.6 | 59.7 | 69.6 | 62.9 | 6.7 | 92/3 | 42/1 | 8.17 | 3.99 | 4.18 | 19.92 | |
| Dulles (IAD) | 80.2 | 59.0 | 69.6 | 63.2 | 6.4 | 90/4,12 | 39/1 | 8.92 | 4.55 | 4.37 | 20.65 | |

Spring (Mar-May) Temperatures: The three major airports recorded near normal seasonal temperatures: DCA, 57.0°F (+0.5°F), BWI, 54.0°F (+0.6°F), IAD, 53.6°F, (-0.3). For the second consecutive year, March was colder than February at all three major airports, marking the first such occurrence in Washington since 1890-91. Temperatures stayed below normal until March 29 at DCA and IAD, when temperatures soared to 78°F and 75°F, respectively, the latest date in March since 1958. On the first day of astronomical spring (21st), high temperatures—with snow falling—held in the 30s at all three major airports, including a record low maximum temperature of 34°F at IAD. It was the coolest April since 1997 at IAD and since 2007 at DCA and BWI and the first April with subnormal readings since 2007 at DCA. BWI did not record its last freeze until April 21st, and IAD, on the 18th. In sharp contrast, a hint of summer prevailed on April 13-14 when high temperatures soared into the mid 80s at the three major airports. Daily record high minimum readings were broken on the 13th with 60°F readings at DCA, 63°F at BWI and 58°F at IAD. May was well above normal (see monthly summary above).

Spring Precipitation: Seasonal precipitation was well above normal: DCA, 14.24" (+3.71"), BWI, 13.62" (+2.54") and IAD, 14.26" (+2.86"). March also included snow: 4.5" at DCA, 6.7" at BWI and 5.3" at IAD. The majority of March's precipitation occurred on March 20-21. A storm began as a cold soaking rain with about ¾" to 1" at DCA and IAD. The rain changed to freezing rain in the afternoon on elevated surfaces grazing trees with between 0.1"-1/4" of ice. The cold air continued the following day when a second storm system resulted in the heaviest snowfall of the season; most of the metro area measured 4"-8" with higher totals north and west. Highest amounts in Maryland were 17.5" near Sabillasville (Frederick County) and 13.1" in Norrisville (Harford County); in Virginia, 12.0" in Staunton and 10.8" in Fishersville (Augusta County). Nearer the cities, totals included 6.7" in Oakton (Fairfax County), VA, 7.4" in Baden (Prince Georges County), MD and 4.1" at the National Zoo in DC. Airport totals included daily records of 4.8" at IAD, 4.7" at BWI and 4.1" at DCA. April was slightly above normal with some strong winds. On April 15-16, 1" to more than 4" of rain was reported in localized areas. Totals included 4.50" near Afton, (Nelson County), VA, 3.52" in Potomac, (Montgomery County), MD; and 2.85" at the Dalecarlia Reservoir in D.C. Numerous roads were flooded, impacting transportation and one person was rescued from a disabled auto in moving water near Chevy Chase (Montgomery County). Strong winds were reported on April 19 with gusts to 52 mph in Gaithersburg and on April 24, gusts to 56 mph Edgemere (Baltimore County) and 54 mph near Lovettsville (Loudoun County), VA. May was extremely wet (see monthly summary above).

Spring 2018 Weather Statistics for the Washington/Baltimore Area

| Location | Station Temperatures (°F) | | | | | Extreme/Day | | Precipitation (inches) | | | |
|-----------------|---------------------------|-------|------|------|--------|-------------|--------------|------------------------|-------|--------|------|
| | AvMx | AvMin | AvgT | NmlT | DepNml | Max | Min | Total | Nml | DepNml | Snow |
| National (DCA) | 66.0 | 48.0 | 57.0 | 56.5 | +0.5 | 91/5-2 | 31/3-11,3-15 | 14.24 | 10.53 | 3.71 | 4.5 |
| Baltimore (BWI) | 63.9 | 44.1 | 54.0 | 53.4 | +0.6 | 92/5-3 | 23/3-10,3-11 | 13.62 | 11.08 | 2.54 | 6.7 |
| Dulles (IAD) | 64.2 | 43.0 | 53.6 | 53.9 | -0.3 | 90/5-4,5-12 | 20/3-10 | 14.26 | 11.40 | 2.86 | 5.3 |

Looking Ahead to Summer: Does a warm spring lead to a hot summer? Below is a listing of the last 10 warmer than normal springs and the subsequent summer temperatures at DCA.

| Average Spring Temperatures at DCA and Subsequent Average Summer Temperatures | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|
| Year | 2018 | 2017 | 2016 | 2015 | 2012 | 2011 | 2010 | 2008 | 2006 | 2004 |
| Spring | +2.4 | +2.3 | +1.6 | +2.8 | +5.7 | =1.1 | +4.0 | +1.0 | +1.0 | +2.8 |
| Summer | ? | -0.7 | +2.8 | +1.9 | +2.7 | +3.4 | +3.6 | +1.2 | +0.8 | -1.7 |