

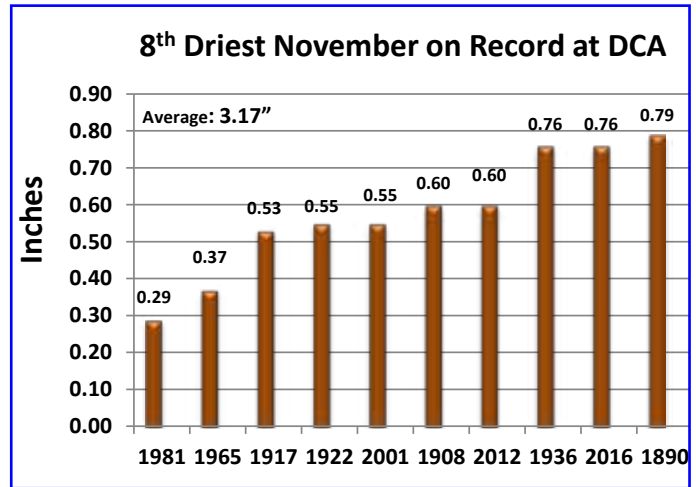
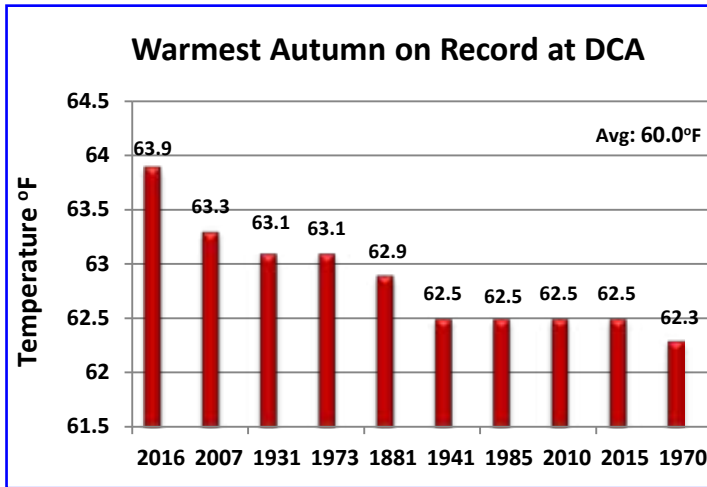


# PRESTO

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



## NOVEMBER 2016: Very Dry with Above Normal Temperatures AUTUMN: Warmest on Record in Washington; Well Below Normal Precipitation



### November Highlights

- Above normal temperatures for 6<sup>th</sup> consecutive month; for month: +3.0°F at DCA, +2.1°F at BWI and +1.2°F at IAD
- On the 3<sup>rd</sup>, DCA recorded a record 83°F, IAD soared to a balmy 79°F and BWI, 78°F
- DCA recorded its first freezing temperature of the season (32°F) on the 23<sup>rd</sup>
- Very dry across metro area: DCA, 0.76" (-2.41"), BWI, 1.51" (-1.79"), IAD at BWI and 1.77" (-1.64") at IAD. For the second consecutive month, DCA's monthly rainfall was less than one inch, first such occurrence since Oct-Nov 2001.
- Beneficial rainfall the final 2 days of the month with 1"-3" measured in most areas. Greatest amounts in Maryland included 2.55" near Jessup (Howard County) and 2.41" near Rosedale (Baltimore County). In Virginia, 2.35" was measured near Leesburg (Loudoun County) and 2.24" near Weyers Cave (Augusta County); IAD set a daily record of 1.31" on the 30<sup>th</sup>
- On the 20<sup>th</sup>, strong winds knocked out power to thousands of homes and fires broke out in Howard, Prince Georges Montgomery County in MD and in Fairfax County in VA. Winds gusted to 61 mph near Belmont (Loudoun County) and 57 in Fairfax, VA, and in Maryland gusts peaked at 58 mph at Camp David (Frederick County) and 56 mph at Andrews AFB in Prince Georges County, MD

### Seasonal Highlights

- Warmest autumn on record in Washington with an average temperature was 63.9°F; 2<sup>nd</sup> warmest on record at IAD with an average temperature of 60.0°F
- Seventh driest autumn in Washington history, 4.16", 5<sup>th</sup> driest at IAD, 4.97", BWI was wetter with 6.55"
- At DCA and IAD, maximum readings were at or above 95°F from the Sep. 8-10, the first such occurrence in September since 1985. IAD's maximum reading at 98°F on the 9<sup>th</sup> was its hottest September day since 1983; BWI's maximum of 96°F on the 8<sup>th</sup> was its hottest September day since 1991 and DCA's 98°F on the 8<sup>th</sup>, its hottest September day since 2010
- Heavy rain fell across the area from Sep. 28-30 with widespread totals of 2"-5" and more than 7" in some locations. Thunderstorms accompanied the heavy rainfall, resulting in the death of one person on the afternoon of the 29<sup>th</sup> when a tree fell in a driveway; the victim's location was Maurertown (Shenandoah), VA. Multiple trees were also uprooted by thunderstorm winds near Port Tobacco Village (Charles County), MD. The copious rainfall resulted in road closures due to flooding across the area including portions of Sligo Creek Parkway in Takoma Park (Montgomery County), MD, and Burke Lake Road near Burke (Fairfax County), VA. Greatest amounts included 7.68" near Prince Frederick (Calvert County), VA, 7.43" near Mechanicsville (St. Mary's County), MD, and 7.04" in Winchester (Frederick County), VA.
- Record warmth Oct. 17-21 resulted in the warmest 5 consecutive days on record at DCA and IAD (5<sup>th</sup> warmest period at BWI) for the second half of October. BWI set record highs of 84°F on the 18<sup>th</sup> and 87°F the following day. IAD recorded a record maximum reading of 84°F on the 17<sup>th</sup>, 85°F on the 18<sup>th</sup>, 87°F on the 19<sup>th</sup> and equaled a record 83°F on the 20<sup>th</sup>
- Very dry across the region in October with less than one inch of precipitation at all three major airports, first such occurrence since February 2009 at IAD and since November 2012 at DCA and BWI

## November 2016

**Temperatures:** For the 6<sup>th</sup> consecutive month and 9<sup>th</sup> month at DCA and BWI in 2016 (8<sup>th</sup> such month at IAD), above normal temperatures were reported at all three major airports: DCA, +3.0°F; BWI, +2.1°F; IAD, +1.2°F. The month's warmest reading occurred on the 3<sup>rd</sup> when DCA recorded a record 83°F and IAD soared to a balmy 79°F and BWI, 78°F. For the month, all three airports were 70°F or greater on 5 days at DCA and BWI and 4 days at IAD. The coolest period was from the 20<sup>th</sup>-22<sup>nd</sup> when maximum temperatures held in the 40s.

Minimum temperatures were relatively mild contributing to the above normal monthly averages. DCA's minimum was at or above 40°F on all but 9 days. Low temperatures were 50°F or greater on 5 days at DCA including 58°F on the 1<sup>st</sup> and 3 days at BWI including 55°F on the 30<sup>th</sup> and 54°F at IAD, also on the 30<sup>th</sup>. There were cool readings. DCA recorded its first freezing temperature of the season (32°F) on the 23<sup>rd</sup>.

**Precipitation:** Dry conditions continued in November with precipitation well below normal. Monthly totals were 0.76" (-2.41") at DCA, 1.51" (-1.79") at BWI and 1.77" (-1.64") at IAD. For the second consecutive month, DCA's monthly rainfall was less than 1 inch, the first such occurrence since Oct-Nov 2001. The month was exceptionally dry until the final 2 days with only about .25" of precipitation.

A storm system finally brought beneficial rainfall on the 29<sup>th</sup> and 30<sup>th</sup> with 1"-3" measured in most areas. Greatest amounts in Maryland included 2.55" near Jessup (Howard County) and 2.41" near Rosedale (Baltimore County). In Virginia, 2.35" was observed near Leesburg (Loudoun County) and 2.24" near Weyers Cave (Augusta County). IAD set a daily record of 1.31" on the 30<sup>th</sup>. In DC, 1.15" was measured at the Dalecarlia Reservoir. Damaging thunderstorm winds caused roof damage to a couple of apartment buildings in Northwest DC.

Another event of note occurred on the 20<sup>th</sup> when strong west winds knocked out power to thousands of homes and fires broke out in Howard, Prince Georges and Montgomery County, MD, and in Fairfax County, VA, according to press reports. Winds gusted to 61 mph near Belmont (Loudoun County), VA, and 57 mph in Fairfax, VA; in Maryland, gusts peaked at 58 mph at Camp David (Frederick County) and 56 mph at Andrews Air Force Base in Prince Georges County, MD

### November 2016 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	Year to Date
National (DCA)	62.0	43.1	52.5	49.5	+3.0	83/3	32/23	0.76	3.17	-2.41	29.09
Baltimore (BWI)	60.6	36.5	48.6	46.5	+2.1	78/1	23/23	1.51	3.30	-1.79	37.75
Dulles (IAD)	60.5	34.7	47.6	46.4	+1.2	79/3	20/23	1.77	3.41	-1.64	32.97

**Autumn (Sep-Nov) Temperatures:** The season featured unprecedented warmth in Washington (see cover) with the warmest autumn on record. Average temperature was 63.9°F (+3.9°F), breaking the previous record of 63.3°F in 2007. IAD average temperature of 60.0°F (+3.3°F) was its 2nd warmest, BWI, 60.2, °F (+3.4°F). September started warm tying for the 3<sup>rd</sup> hottest in Washington's history and warmest since 1980; it was the hottest September on record in IAD's 53-year history, with an average temperature of 73.1°F. IAD and DCA reported their warmest average minimum reading on record, 63.5°F and 68.6°F, respectively. At DCA and IAD, maximum readings were at or above 95°F from September 8-10, the first such occurrence in September since 1985. IAD maximum reading of 98°F on the 9<sup>th</sup> was its highest September reading since 1983; BWI's maximum of 96°F on the 8<sup>th</sup> was its warmest since 1991, and DCA's 98°F on the 8<sup>th</sup> was its warmest since 2010. On the September 14, DCA set a daily record of 95°F. For the month, DCA either broke or tied three daily high minimum temperature records, BWI marked one such day and IAD, five. October continued the warmer than normal readings. Record warmth from the 17-21 resulted in the warmest 5 consecutive October days on record at DCA and IAD, and 5<sup>th</sup> warmest period at BWI for the second half of October. BWI set record highs of 84°F on the 18<sup>th</sup> and 87°F the 19<sup>th</sup>. IAD recorded a record maximum reading of 84°F on the 17<sup>th</sup>, 85°F on the 18<sup>th</sup>, 87°F on the 19<sup>th</sup> and equaled a record 83°F on the 20<sup>th</sup>, leading to its 4<sup>th</sup> warmest October on record. DCA's low of 68°F also set a new record on the 20<sup>th</sup>. BWI's lows of 64°F on the 19<sup>th</sup> and 65°F on the 20<sup>th</sup> set records as well. In contrast, BWI and IAD, recorded their first freeze of the season on the 26<sup>th</sup>, with minimum readings of 30°F at IAD and 32°F at BWI. November continued warm (see monthly summary above).

**Autumn Precipitation:** The season featured very dry conditions: DCA, 4.16" (-6.13"), BWI, 6.55" (-4.11"), and IAD, 4.97" (-5.61"). September was dry over most of the area with some localized rain but ended with a slow moving 3-day storm that brought from 2"-5" of rain with more than 7" in some locations. Some areas also were impacted by thunderstorms, one of which resulted in a fatality on the 29<sup>th</sup> when a falling tree fell on an individual in a driveway near Maurertown (Shenandoah), VA. The heavy rain closed roads across the area including portions of Sligo Creek Parkway in Takoma Park (Montgomery County) and Burke Lake Road near Burke (Fairfax County). Greatest amounts included 7.68" near Prince Frederick (Calvert County), MD, 7.43" near Mechanicsville (St. Mary's County), MD, and 7.04" in Winchester (Frederick County), VA. October continued drier than normal with less than one inch of rain at all three major airports. In the second week of October, remnants of Hurricane Matthew swept in with heavy rainfall in the southern and eastern metro suburbs. Totals in Maryland included 3.19" near Ridge (St. Mary's County), 2.83" near Patuxent River (Calvert County) and 1.84" near Riva, (Ann Arundel County); In Virginia, totals included 2.30" near Fredericksburg and 2.08" in Spotsylvania County. November continued the dry pattern (see monthly summary).

### Autumn 2016 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
National (DCA)	72.3	55.5	63.9	60.0	3.9	98/9-8	32/11-23	4.16	10.29	6.13
Baltimore (BWI)	70.8	49.5	60.2	56.8	3.4	96/9-8, 9-10	23/11-23	6.55	10.66	4.11
Dulles (IAD)	71.3	48.8	60.0	56.7	3.3	98/9-9	20/11-23	4.97	10.58	5.61

**Looking Ahead to December:** For the last 6 years, DCA has recorded subnormal snowfall in December. Will December 2016 bring more snow? Shown below are the most recent 10 years of December snowfall in Washington. Normal DCA December snowfall is 2.3".

Year	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
December Snowfall	0.0	Trace	1.5	0.2	Trace	2.1"	16.6"	Trace	2.6"	Trace