

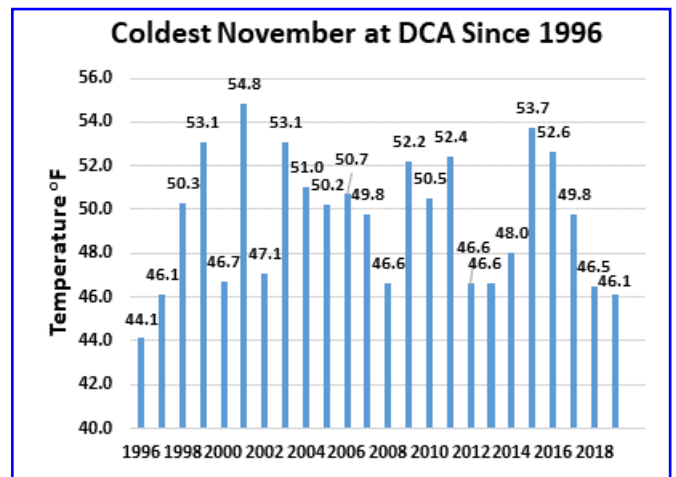
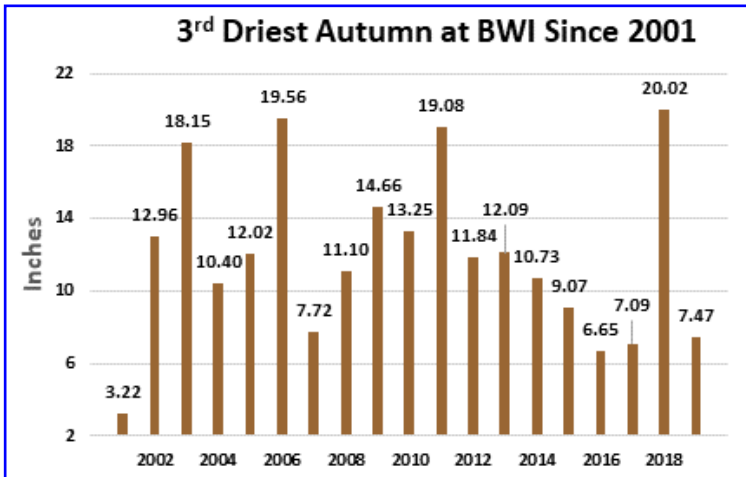


PRESTO

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



NOVEMBER 2019: Cold and Dry Autumn: Warm Start, Cold Finish; Dry, Then Wet, Then Dry Again



November Highlights

- All three airport recorded subnormal temperatures: DCA, -3.5°F, BWI, -2.2°F, IAD, -4.2°F.
- Subnormal temperatures were observed at DCA for first month since November 2018.
- DCA and IAD recorded 9 days when maximum readings were below 50°F; BWI, 8 such days.
- Well below normal rainfall across the region: 1.37" (-1.80") at DCA, 1.10" (-2.20") at BWI and 1.62" (-1.79") at IAD.
- On the 17th, light amounts of freezing drizzle coated roads with ice across portions of the Shenandoah area resulting in a crash between a tour bus and a tractor trailer, resulting in 21 injuries near Afton (Nelson County), VA, near the Augusta County line. The ice also closed state route 664 west of the Blue Ridge Parkway as well as part of Skyline Drive.

Autumn Highlights

- Despite a cold November, the area observed above normal seasonal temperatures: DCA, 62.2°F (+2.2°F); BWI, 60.1°F (+3.3°F); IAD, 58.4°F (+1.7°F)
- Autumn had below normal seasonal rainfall: DCA, 8.28" (-2.01"), BWI, 7.47" (-3.19") and IAD, 8.00" (-2.58").
- Washington recorded its 3rd hottest September on record and warmest since 1980; Baltimore, 5th hottest and warmest since 1931; IAD, 3rd hottest and warmest since 2016.
- BWI recorded 25 days in September with maximum temperatures at or above 80°F and 17 days at or above 85°F, both all-time records.
- Washington marked its 4th driest September on record and driest since 2005. In Baltimore, it was the 2nd driest and driest since 1884; IAD was 2nd driest and driest since 2005, setting all time September records.
- Washington observed its 10th driest month on record and driest since March 2006; Baltimore tied 6th driest month and driest since October 2000 and IAD observed its 11th driest month and driest since February 2009.
- On October 2, temperature readings soared to all-time record highs not only for the calendar day but also for October: 98°F at both DCA and BWI and 96°F at IAD.
- There was well above normal October rainfall with nearly all precipitation occurring from October 16-31: 6.66" (+3.26") at DCA, 6.21" (+2.88") at BWI and 5.97" (+2.92") at IAD.
- On October 17, strong winds gusted to 57 mph near Shady Grove (Greene County), VA, and to 51 mph near Dayton (Howard County), MD. The strong winds in Bethesda (Montgomery County), MD, caused a large tree to fall onto a car, brought down power lines and snapped several power poles.
- The "Halloween" storm closed October with more heavy rain. Highest totals were 3.32" in Poolesville (Montgomery County), 2.56" in Syria (Madison County), VA, and 1.61" in Washington. Widespread damaging winds accompanied this storm which resulted in one fatality when a tree fell onto an occupied car in Colesville (Montgomery County). A brief EF-0 tornado struck Timberville (Rockingham County), VA with winds estimated at 75 mph. The path width was 25 yards and path length was 0.5 miles and resulted in tree and property damage.

November 2019

Temperatures: It was the first month with subnormal temperatures since March at DCA and BWI, (IAD tied March's normal): DCA, -3.5°F; BWI, -2.2°F; and IAD, -4.2°F. Autumn's final month ushered in a sharp transition to subnormal temperatures. It tied with 1997 for the coldest November in Washington, coldest since 1996 (see graphic) and the coldest at IAD since 2014. The chilly readings were consistent and at times record breaking. There were 9 days when maximum readings were below 50°F at DCA and IAD and 8 such days at BWI. The 13th had the month's lowest maximum temperatures with highs remaining in the 30s, including a record low maximum of 37°F at IAD. Maximum temperatures failed to reach 70°F all month with the highest temperature 69°F at all three major airports on Veteran's Day.

Minimum readings also broke and then equaled record low temperatures. BWI was 24°F on the 9th and 22°F on the 13th. IAD set a calendar day record low of 19°F on the 13th and despite not setting an additional record, was even colder on the 14th, 17°F. The season's first freeze occurred on the 9th at DCA, 4th at IAD and 2nd at BWI.

Precipitation: The precipitation pattern reverted to much drier than normal, the pattern during all of September and the first half of October. Monthly rainfall totals: DCA, 1.37" (-1.80"); BWI, 1.10" (-2.20"); and IAD, 1.62" (-1.79"). The area received well below normal rainfall. There were no events with greater than 1" at DCA, BWI and IAD and only a trace of snow in the area. It was the driest November since 2012 at BWI and IAD.

There were a few newsworthy events. In the early am hours of the 17th, light amounts of freezing drizzle coated roads with ice across portions of the Shenandoah area resulting in a crash between a tour bus and a tractor trailer that resulted in 21 injuries near Afton in Nelson County near the Augusta County line. The ice also closed state Route 664 west of the Blue Ridge Parkway as well as parts of Skyline Drive.

The most significant rainfall of the month occurred from the 23rd- 24th. While many locations recorded up to ¾" of an inch of rain some locations exceeded an inch, including 1.50" near Rockville, (Montgomery County), MD, and 1.20" near Arcola (Loudoun County), VA. Strong winds followed the event with gusts to 51 mph at the U.S. Capitol in Washington. Strong winds were also observed on the 28th when peak gusts reach 62 mph near Dayton (Howard County), MD, and to 60 mph in Swoope (Augusta County), VA.

November 2019 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	Year to Date
National (DCA)	53.9	38.2	46.1	49.6	-3.5	69/11	26/13	1.37	3.17	-1.80	0	39.06
Baltimore (BWI)	54.3	34.3	44.3	46.5	-2.2	69/11	22/13,14	1.10	3.30	-2.20	T	34.56
Dulles (IAD)	52.4	31.9	42.6	46.4	-4.2	69/11	17/14	1.62	3.41	-1.79	T	37.84

Autumn (Sep-Nov) Temperatures: Despite a cold finish, autumn again featured above normal temperatures at the major airports: DCA, +2.2°F; BWI, +3.3°F; and IAD, +1.7°F. September was the 3rd hottest on record and warmest since 1980 at Washington. In Baltimore, September was the 5th hottest and warmest since 1931. It was the 3rd hottest September on record at IAD. DCA marked a calendar day record on the 4th (96°F) and 12th (98°F). At BWI, the temperature soared on the 4th to 96°F and tied a record high and on the 12th, 97°F, setting another new record. IAD equaled and broke numerous records: on the 12th, 95°F equaled a record; on the 23rd, 94°F broke a record; and on the 28th, 86°F tied a record; finally on the 29th, 89°F broke a record. IAD also equaled two high minimum temperature records: 68°F on the 23rd and the 30th.

October was the 7th warmest on record at Washington, 11th warmest on record and the warmest since 2007 at Baltimore. On the 2nd, readings soared to all-time record highs not only for the calendar day but also for October: 98°F at DCA and BWI and 96°F at IAD. Readings also soared to 90°F at BWI on the 1st and reached 80°F or greater in Washington on 5 additional days. November turn cold (see monthly summary above).

Autumn Precipitation: The season featured significant changes from parched conditions in September and the first half of October to very wet conditions the latter half of October before transitioning back to a dry pattern in November: DCA, 8.28" (-2.01"), BWI, 7.47" (-3.19") and IAD, 8.00" (-2.58"). Very dry conditions that developed in late August continued throughout September, leading to moderate drought conditions. Washington recorded its 4th driest September on record and driest since 2005. In Baltimore, it was the 2nd driest September and driest since 1884; at IAD, it was also the 2nd driest September and driest since 2005. DCA recorded 17 consecutive days (13th-29th) without measurable rainfall. September included three notable severe thunderstorms across most of the region resulting in tree and property damage.

The first half of October was dry but switched to repeated rain events. It was the 9th wettest October on record in Washington and wettest since 2005. Heavy rain on October 16 finally ended a dry streak dating from August 24; the event was the first of four events (October 20th, 27th, 30th-31th) bringing more than an inch of rain to the major airports with higher totals to north and west. The last event included widespread damaging winds, resulting in one fatality when a tree fell onto an occupied car in Colesville (Montgomery County), MD. A brief EF-0 tornado struck Timberville (Rockingham County), VA, with winds estimated at 75 mph; path width was 25 yards and path length, 0.5 miles. The event resulted in tree and property damage. On the 11th, an unusual flooding event without rainfall occurred along the Potomac River in Alexandria, VA, and along portions of the Chesapeake Bay in Annapolis and St. Mary's County. An easterly on-shore wind flow around Tropical Storm Melissa well out in the Atlantic, combined with a full moon and high tide, resulting in localized flooding. November was dry (see monthly summary above).

Autumn 2019 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)	70.7	53.8	62.2	60.0	+2.2	98/9-12, 10-2	26/11-13	8.28	10.29	-2.01	0
Baltimore (BWI)	70.6	49.6	60.1	56.8	+3.3	98/9-11, 10-2	22/11-13, 14	7.47	10.66	-3.19	T
Dulles (IAD)	69.2	47.6	58.4	56.7	+1.7	96/10-2	17/11-14	8.00	10.58	-2.58	T

Looking Ahead to December: For the 9th consecutive year, in 2018 DCA recorded subnormal snowfall in December. Will December 2019 bring more snow? Shown below are the most recent 10 years of December snowfall in Washington. Normal DCA December snowfall is 2.3".

Year	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
December Snowfall	0	1.9	T	0	Trace	1.5	0.2	Trace	2.1"	16.6"