



National Weather Service

Storm Data and Unusual Weather Phenomena



June 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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DISTRICT OF COLUMBIA

District Of Columbia

Northwest Portion to Northeast Portion	02	1833EST 1838EST			0	0			Hail (1.00)
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District Of Columbia

Northeast Portion	02	1835EST			0	0	10K		Thunderstorm Wind
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The combination of an upper-level disturbance, increasing atmospheric shear, and ample instability set the stage for scattered severe weather across the District of Columbia during the evening. Individual mini-supercell storms developed over western Maryland, northern Virginia, and eastern West Virginia, and propagated east-southeast towards the metropolitan region. One cell crossed the city, producing hail across the northern half which ranged from 0.5" to 1" in diameter. Peripheral thunderstorm winds gusted in excess of 20 knots at Washington/National Airport (DCA); stronger winds in town caused damage to large tree limbs across some neighborhoods in Northeast.

District Of Columbia

Northwest Portion	13	1440EST			0	0	15K		Thunderstorm Wind
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District Of Columbia

Northeast Portion	13	1443EST			0	11			Lightning
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A vigorous upper-level disturbance acted upon increasingly warm and humid air near the surface to produce a squall line of strong to severe thunderstorms west of the metropolitan region during the early afternoon. This line moved rapidly east, passing through the District of Columbia and surrounding communities before 1500EST. As the line crossed Northwest, numerous trees and large limbs fell, blocking several roads.

The day will be remembered for a devastating lightning strike at RFK stadium, where a crowd of 66,000 had gathered for the Tibetan Freedom Concert. Though ample warning was provided to stadium officials, there was no place for those standing away from the protected portion of the venue to seek shelter. Lightning struck ahead of the storm cell, injuring 11 persons. Four of the injured were taken to DC General Hospital; one was critically injured, another was initially in fair condition, and two other were in good condition. The other seven persons were treated at the scene. The concert was suspended immediately after the lightning strike.

Potomac Electric Power Co. reported over 100 customers were without power during the peak of the storm.

District Of Columbia

Northeast Portion	15	1635EST 1640EST			0	0	10K		Thunderstorm Wind
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The juxtaposition of a northward-moving cold front, strong surface low pressure over the midwest, and a fast upper-level jet combined to produce a severe thunderstorm which rumbled through the city during the late afternoon. Damage included downed trees and large limbs mainly across Northeast, concentrated near the Maryland line in the Brookland neighborhood. The strong winds may have blown out windows in buildings on Franklin Street, NE. Hail, of unknown size, also fell across portions of town.

District Of Columbia

Northwest Portion	23	2045EST 2130EST			0	0	10K		Flash Flood
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A slow-moving line of thunderstorms dumped between 2.4 and 3 inches of rain over Washington and the immediate suburbs. Rock Creek came out of its banks, and a vehicle with two occupants became stuck - requiring emergency rescue operations.

MARYLAND, Central

Howard County

Ellicott City	01	0000EST			0	0	10K		Thunderstorm Wind
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Baltimore City (C)

Druid to Mt Washington	01	0015EST			0	0	10K		Thunderstorm Wind
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Harford County

Aberdeen	01	0025EST			0	0	5K		Thunderstorm Wind
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A derecho whipped across northern Maryland just after midnight on June 1, knocking down hundreds of trees and producing scattered property damage. Baltimore Gas and Electric (BGE) reported 61,000 customers without power during the overnight hours, mostly in Carroll, Howard, and Baltimore Cos, as well as Baltimore City. Some of the hardest hit areas did not receive power until the following evening. BGE also noted that more than double the normal number of cleanup crews were out removing trees and limbs.

Tree and property damage began in western Carroll Co and continued sporadically through northern Howard, Baltimore (Co. and City), and Harford Co. In Westminster, city crews commented that tree damage was the most they had seen "in 20 years". Many trees and large limbs fell onto roadways; one smashed a vehicle. Ten thousand customers were without power in Carroll Co alone.



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					Killed	Injured	Property	Crops	

MARYLAND, Central

The line of storms scraped northern Howard Co, knocking down more trees, limbs, and power lines.

Widespread, scattered tree and power line damage was reported in Baltimore Co. A wind gust of 66 mph was recorded in Upperco, near the Carroll Co line. The same storm produced a 59 mph gust in Towson approximately 10 minutes later. Numerous trees were reported down between Cockeysville and Towson. Volunteer fire companies answered at least 40 calls for fallen trees. One tree caused damage to a house. Five other trees/large limbs covered the northern suburban light rail line, mainly north of Ruxton, causing commuter delays later that morning. A few crossing gates were blown down as well. Less than a half hour later, numerous trees and limbs were knocked down in the city of Baltimore, most likely in the northwestern section.

The storms weakened a bit as they moved into Harford Co. Still, several trees/limbs were blown down, as were power lines. Several utility poles caught fire; over 6000 customers were without power at the peak of the storm.

An isolated cell produced damage in extreme eastern Baltimore Co before the derecho arrived. On Sparrows Point, near Edgemere, several large trees were either uprooted or snapped off at their bases. Cement slabs were also moved by the high winds.

Carroll County 10 S Taylorsville	02	1636EST			0	0			Hail (0.75)
Carroll County Winfield	02	1743EST 1750EST			0	0			Hail (1.00)
Carroll County Hampstead	02	1752EST			0	0	3K		Thunderstorm Wind
Carroll County Finksburg	02	1758EST			0	0	3K		Hail (1.75)
Montgomery County Clarksburg	02	1804EST			0	0			Hail (0.75)
Baltimore County Reisterstown to Owings Mills	02	1814EST 1824EST			0	0		10K	Hail (0.75)
Montgomery County Damascus	02	1820EST 1834EST			0	0	10K		Hail (1.75)
Baltimore City (C) Baltimore	02	1829EST			0	0	5K		Hail (1.75)
Montgomery County Laytonsville to Ashton	02	1835EST 1850EST			0	0	75K	15K	Hail (2.25)
Allegany County 3 NW Mt Savage Jct to 2 NW Mt Savage Jct	02	1856EST 1858EST	1	50	0	0		30K	Tornado (F1)
Allegany County Cumberland	02	1903EST			0	0			Hail (0.75)
Prince George'S County Laurel	02	1905EST 1920EST			0	0	5K		Hail (1.75)
Allegany County Oldtown	02	1920EST			0	0	3K	10K	Hail (1.00)
Allegany County Oldtown	02	1920EST			0	0	15K		Thunderstorm Wind
Allegany County 3 SE Cumberland to 3.5 SE Cumberland	02	1921EST 1923EST	0.5	50	0	0		15K	Tornado (F0)
Anne Arundel County Crofton	02	1935EST			0	0	10K		Hail (2.00)



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MARYLAND, Central

Anne Arundel County									
Annapolis	02	1945EST			0	0	3K		Thunderstorm Wind
Anne Arundel County									
South Portion	02	1952EST			0	0			Hail (0.75)
Allegany County									
1 E Flintstone	02	1953EST			0	0			Hail (0.75)
Allegany County									
2 NW Frostburg to 2 N Cresaptown	02	2043EST 2050EST	8	250	0	5	5M	250K	Tornado (F4)
Anne Arundel County									
Annapolis	02	2215EST			0	0	10K		Thunderstorm Wind

The combination of an upper-level disturbance, increasing atmospheric shear, and ample instability set the stage for a major severe weather episode across the north half of Maryland during the late afternoon and evening. The episode was highlighted by supercell thunderstorms which produced three tornadoes, numerous instances of large hail, and several downbursts.

The most substantial event was a strong-to-violent tornado which caused excessive damage in western Allegany Co. The multi-vortex twister had estimated wind speeds of 210 mph - the highest in recorded Maryland history - when it ravaged a neighborhood of well-constructed single-family homes along a local plateau just north of Frostburg. The tornado was on the ground for an amazing 33 miles, beginning in Somerset Co, Pennsylvania before crossing northeastern Garrett Co Maryland on its way to Allegany Co. The parent supercell tracked over 200 miles. After descending Big Savage Mountain, the twister produced a swath of destruction across a neighborhood just west of Frostburg. At least eight homes were destroyed and dozens others were damaged. Several cars were damaged, and some were totalled. One two-story home was obliterated. Left in the wake was the foundation and some remnant plywood. The residents of the home - a woman and two children - received ample warning and rode out the storm to safety in the basement. Advance warning likely saved several lives and reduced casualties; in all, only 5 area residents sustained minor injuries.

The tornado continued through Eckhart Mines and Clarysville, causing further damage and destruction to homes and other property. It then continued through undeveloped areas, then passed across Dans Mountain before damaging a few more residences along state route 53 just north of Cresaptown. The twister lifted at that point, but the parent thunderstorm continued producing damage into eastern West Virginia. In all, emergency management officials reported 29 homes destroyed and 125 damaged, with nearly half of the surviving homes receiving moderate to major levels of damage. Initial dollar estimates ranged from \$4.5 to \$5 million. Hundreds, perhaps thousands, of trees in forested and developed areas were snapped or uprooted. The supercell was so powerful that Frostburg area residents' papers, including personal checks and one high school diploma - were found over 50 miles downstream in the northern Shenandoah Valley region of Virginia.

The "Frostburg Tornado" was not the only twister to affect the county. The area had been on high alert since early evening - tornado warnings had been issued two other times, and funnel clouds were observed by several witnesses prior to sunset. One of the funnels touched down not too far from where the Frostburg Tornado entered the county - along the west side of Big Savage Mountain nearly 2 hours earlier. The funnel lifted while over Frostburg and nearby communities, and continued through Cumberland before touching down again on Irons Mountain 2-3 miles southeast of the city. In each instance, damage was limited to forested areas along the ridges.

Tornadoes were just a portion of the severe weather to affect northern Maryland. The other major player was hail, with dozens of occurrences associated with each mini-supercell. The strongest cells produced hailstones ranging from 1.75" to 2.50" in diameter; the strong updrafts in each storm combined with steep atmospheric lapse rates to produce not only large hail but long-duration hail as well. Some areas experienced up to 20 minutes of hail, and many residents noted hail which covered the ground. Reported damage included some stripped siding, varying sized dings and dents, as well as shattered glass, in numerous vehicles; stripped paint from homes and vehicles, small limb and leaf debris, and likely crop damage or destruction. The main hail-producing storm affected portions of northern Montgomery, Howard, southern Carroll, southern Baltimore, and northern Prince George's and Anne Arundel Cos - all between 1800 and 1945EST.

The episode concluded in Maryland with a few wind damage reports on the western shore of the Chesapeake Bay just before midnight. Winds blew out the door to the Annapolis (Anne Arundel Co) city fire department station, and knocked several large trees down in Eastport at approximately the same time.

Montgomery County									
Countywide	13	1435EST 1450EST			0	1	100K		Thunderstorm Wind (G56)
Howard County									
West Portion	13	1450EST 1505EST			0	0	8K		Thunderstorm Wind



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MARYLAND, Central

Carroll County South Portion	13	1500EST 1515EST			0	0	2K		Tstm Wind/Hail
Anne Arundel County Millersville	13	1515EST			0	0			Hail (0.75)
St. Mary'S County Leonardtwn	13	1543EST			0	0			Hail (0.75)
Harford County Aberdeen to Havre De Grace	13	1700EST 1745EST			0	0	8K		Flash Flood
Harford County Countywide	13	1700EST			0	0	1K		Tstm Wind/Hail
Harford County Level	13	1715EST			0	0	5K		Lightning
<p>A vigorous upper-level disturbance acted upon increasingly warm and humid air near the surface to produce a squall line of strong to severe thunderstorms which traversed central and northeastern Maryland during the afternoon. Overall, damage was dominated by numerous downed trees, large limbs, and power lines, though there were scattered occurrences of large hail.</p> <p>Montgomery Co was hardest hit. Though no one area received major damage, nearly all communities in the eastern two-thirds of the county had some trees, large limbs, or wires down. A portion of Woodfield Road (state route 124) was closed north of Gaithersburg; dozens of trees and large limbs were down along the state route 28 corridor from Darnestown to Rockville. Farther south, fallen trees closed a portion of Persimmon Tree Road in Potomac. The most harrowing experience occurred in Glen Echo, where two vehicles were damaged by a large limb and falling wires. The two males were rescued; the woman was brought to a nearby hospital for observation. In all, county emergency management officials reported a dozen trees on houses and several others on vehicles across the county. The combination of wind and lightning knocked out power to over 40,000 Potomac Electric Power Co. customers in Montgomery and Prince George's Cos.</p> <p>Across northeastern Maryland, tree damage was confined to smaller limbs and some wires. However, a slower moving storm dropped at least 1 1/2 inches of rain across central and eastern Harford Co, creating a period of flash flooding which required at least one rescue of a stranded vehicle. Several reports of street flooding were received from both Aberdeen and Havre de Grace.</p> <p>Earlier, tree and wire damage was noted in southern Carroll and western Howard Cos, with the more substantial damage in Howard. Baltimore Gas and Electric reported at least 10,000 customers lost electricity in these areas at the peak of the storm.</p>									
Prince George'S County Temple Hills	15	1630EST			0	1			Lightning
Prince George'S County Oxon Hill	15	1635EST 1640EST			0	0	5K		Thunderstorm Wind
Charles County 4 W Waldorf	15	1650EST 1655EST			0	0	5K		Thunderstorm Wind
Anne Arundel County South Portion	15	1700EST 1715EST			0	0			Hail (0.75)
Charles County Doncaster to 1 S Mc Conchie	15	1730EST 1745EST			0	0	20K		Thunderstorm Wind
Calvert County St Leonard	15	1745EST			0	0	3K		Hail (1.75)
Charles County 6 W La Plata	15	1818EST 1830EST			0	0			Hail (1.00)
Charles County 6 W La Plata	15	1818EST 1830EST			0	0	8K		Thunderstorm Wind



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MARYLAND, Central

St. Mary'S County									
Charlotte Hall	15	1833EST			0	0			Hail (0.75)
Charles County									
Benedict to I N Benedict	15	1835EST 1840EST			0	0	10K		Thunderstorm Wind
St. Mary'S County									
Clements	15	1845EST			0	0	35K		Thunderstorm Wind
Calvert County									
Lusby	15	1855EST 1905EST			0	0			Hail (0.75)
Calvert County									
Lusby	15	1855EST 1905EST			0	0	5K		Thunderstorm Wind

The juxtaposition of a northward-moving warm front, strong surface low pressure over the midwest, and a fast-moving upper-level jet combined to produce an outbreak of severe weather across central and lower southern Maryland during the evening. Damage was highlighted by downed trees and some large hail. The most substantial damage occurred with three cells - one a decaying bow-echo across southern Prince George's and northern Charles Cos; the others rotating mini-supercells which tracked across portions of Charles, St Mary's, and southern Calvert Cos.

Lightning associated with the first cell struck a police cruiser in Temple Hills, with the driver sustaining injuries that required a brief hospital stay. The same cell knocked several trees and large limbs down in Oxon Hill and near Waldorf (Charles Co). Though gradually weakening, this cell continued to produce hail - ranging from 0.75" in southern Anne Arundel Co to golf ball size near St. Leonard in central Calvert Co. A second, more potent rotating thunderstorm moved into Charles Co from the Potomac River, causing numerous trees and large limbs to fall between Doncaster and McConchie.

Another cell tracked across central and eastern Charles Co, knocking down large limbs and wires, as well as producing 1 inch hail, west of La Plata. This cell produced substantial trees damage in the extreme eastern portion of the county between Benedict and Teagues Point. The storm continued into southern Calvert Co, knocking down more trees and dropping 0.75" diameter hail in and around Lusby. Meanwhile, the other cell continued into St Mary's Co, producing additional wind and hail. In Clements, two barns were destroyed and at least a dozen trees were snapped or uprooted.

Though utility statistics were sketchy, one could assume that thousands of customers lost power during the peak of the episode. Potomac Electric Power Co reported 1,700 customers were without power; many more likely lost electricity across the Southern Maryland Electric Co coverage area, which includes St Mary's, Calvert, Charles, and portions of Prince George's Co.

The entire episode ended shortly after 1900EST.

Allegany County									
Cumberland	16	1700EST			0	0	25K		Thunderstorm Wind
Frederick County									
Middletown	16	1705EST 1710EST			0	0	30K	5K	Thunderstorm Wind
Washington County									
3 S Halfway to Halfway	16	1712EST 1718EST	3	200	0	1	200K		Tornado (F1)
Frederick County									
Frederick	16	1715EST			0	0	75K		Lightning
Frederick County									
Jefferson to Buckeystown	16	1715EST 1729EST			0	0	25K		Thunderstorm Wind
Howard County									
North Portion	16	1720EST 1730EST			0	0	10K		Thunderstorm Wind
Washington County									
Halfway to Hagerstown	16	1721EST 1729EST	5	100	0	0	200K		Tornado (F1)
Carroll County									
Countywide	16	1725EST 1755EST			0	0	10K		Lightning



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MARYLAND, Central

Carroll County										
Sykesville to Eldersburg	16	1729EST 1736EST			0	0			Hail (1.00)	
Frederick County										
Walkersville to Libertytown	16	1730EST 1745EST			0	0	15K		Thunderstorm Wind	
Washington County										
Hagerstown Arpt to East Portion	16	1730EST 1740EST			0	0	20K	20K	Thunderstorm Wind (G60)	
Washington County										
Leitersburg	16	1730EST			0	0	5K		Hail (1.75)	
Washington County										
1 NE Maugansville to 3 NE Maugansville	16	1730EST 1734EST	2	75	0	0	10K	20K	Tornado (F1)	
Frederick County										
3.5 NE Frederick to 4 NE Frederick	16	1735EST	0.5	50	0	0	10K		Tornado (F0)	
Carroll County										
Finksburg	16	1736EST 1740EST			0	0	35K	15K	Hail (2.50)	
Carroll County										
3 NE Finksburg to 3.5 NE Finksburg	16	1738EST 1739EST	0.5	50	0	0	20K		Tornado (F0)	
Baltimore County										
Reisterstown	16	1745EST			0	0	10K		Thunderstorm Wind	
Carroll County										
Westminster	16	1750EST			0	0	50K		Thunderstorm Wind (G56)	
Carroll County										
North Portion	16	1800EST 1900EST			0	0	10K		Flash Flood	
Charles County										
North Portion	16	1810EST 1823EST			0	0	8K		Thunderstorm Wind	
St. Mary'S County										
Milestown to South Portion	16	1820EST			0	0	50K	5K	Thunderstorm Wind	
Calvert County										
Prince Frederick	16	1832EST			0	0	35K		Thunderstorm Wind	

The approach of a cold front combined with impressive jet stream energy at upper-levels of the atmosphere acted on unstable air near the surface to produce a major severe weather episode across northern Maryland for the second time in three weeks. The combustible situation produced a mesoscale low pressure system which focused the most substantial severe which focused the most substantial severe weather in north-central Maryland. The episode featured five tornadoes, nearly a dozen instances of wind damage, and several large hail occurrences.

The most concentrated damage was in and around Hagerstown. Three separate tornadoes dropped from the same parent thunderstorm within moments of each other. The first two caused considerable property damage between the town of Halfway and Hagerstown. The third produced a track of mainly tree and underbrush damage from just south of the Washington County Regional Airport to the Maryland/Pennsylvania state line. The first twister, which developed three miles south of Halfway, toppled and uprooted dozens of trees and blew down wires in the Tammany Manor neighborhood, as well as at the Hickory Elementary School. The tornado saved its worst for the Valley Mall, where a portion of the roof was torn off and damage was noted at an anchor store's loading dock. Another adjacent store had an electrical fire.

More commercial damage occurred a few blocks north, along Wesel Boulevard, where the roofs of several vacant buildings were torn off. Canopy tents at the Wal-Mart department store were flattened; the store's garden center had its greenhouse destroyed; many pieces of equipment, and plants and flowers, were also damaged. An awning at a local automobile dealership was ripped off. This tornado dissipated just southeast of the Washington Co. Detention Center - but not before knocking down trees along Interstate 81, temporarily closing one of the two travel lanes.



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MARYLAND, Central

hour), falling onto saturated soil, caused small streams and creeks to escape their banks near Damascus. In western Carroll Co, the Meadow Branch overflowed its banks just west of Westminster, causing temporary closure of state highway 140.

Carroll County									
Millers	26	1408EST			0	0			Hail (0.88)
Baltimore County									
2 N Cockeysville	26	1415EST			0	0			Hail (0.75)
Baltimore County									
Reisterstown to Towson	26	1600EST 1614EST			0	0	10K		Thunderstorm Wind
Baltimore County									
Towson to Essex	26	1615EST 1630EST			0	0	10K		Thunderstorm Wind
Montgomery County									
2 N Gaithersburg	26	1615EST			0	0	5K		Thunderstorm Wind
Baltimore County									
Reisterstown	26	1630EST			0	1	25K		Hail (1.00)
Carroll County									
South Portion	26	1650EST 1700EST			0	0	5K		Thunderstorm Wind
Baltimore City (C)									
West Baltimore	26	1730EST			1	1			Lightning
		F9UT							
Anne Arundel County									
Countywide	26	1910EST 1925EST			0	0	10K		Thunderstorm Wind
Anne Arundel County									
Arnold	26	1920EST			0	0	20K		Lightning
Calvert County									
Lusby	26	1930EST			0	0	10K		Thunderstorm Wind
St. Mary'S County									
Mechanicsville	26	1930EST			0	0			Hail (0.75)
St. Mary'S County									
2 W Patuxent River Nas	26	1930EST			0	0	25K		Lightning
St. Mary'S County									
Charlotte Hall to Leonardtown	26	1940EST 1955EST			0	0	10K		Thunderstorm Wind

A weak upper-level disturbance, combined with a surface trough, triggered a hot, humid, unstable air mass lying across much of Maryland. Strong to severe thunderstorms developed rapidly in northern Maryland and tracked east-southeast into east-central and lower southern Maryland during the early evening. The main culprits for damage were gusty winds and lightning, through a few occurrences of large hail were noted.

Initial thunderstorms produced large hail in central Baltimore and northern Carroll Cos during the mid afternoon. The real action began during the early evening commuting hours, when a severe thunderstorm knocked down numerous trees and large limbs on an east-southeast trek from Reisterstown to Essex. The same cell produced wind-driven hail which broke windows of several automobiles in Reisterstown. The flying glass shards injured one occupant of a vehicle; the shards had to be removed from his scalp. Other wind damage was noted across southern Carroll Co and central Montgomery Co.

The final round of storms fired during the mid-evening, producing damaging wind gusts (mainly trees and power lines), first in northern and eastern Anne Arundel Co. Other storms developed over lower southern Maryland, producing tree and wire damage in St Mary's and Calvert Cos.

Lightning was a major factor with the storms. A lightning death occurred in southwest Baltimore City at 1730EST when two youngsters were running home to escape the storm. They made it to the shelter of a large tree, which was struck. The attendant current burned over half of the deceased's (a nine-year old girl) body. Her 8 year-old friend survived with lesser burns. Farther south, a small house fire was ignited by a lightning strike in Arnold. Power outages of at least 33,000 Southern Maryland Electric Co. customers were directly attributed to a lightning strike at a supply station in St Mary's Co. In all, at least 50,000 Maryland



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MARYLAND, Central

residents west of the Chesapeake Bay lost electricity during the outbreak of storms.

Washington County 5 SW Hagerstown to Hagerstown Arpt	30	1639EST			0	0	5K		Thunderstorm Wind (G50)
Washington County Leitersburg to Smithsburg	30	1700EST			0	0	10K		Thunderstorm Wind
Frederick County Middletown	30	1705EST			0	0	3K		Thunderstorm Wind
Frederick County 1 S Thurmont	30	1715EST			0	0	3K		Thunderstorm Wind
Carroll County Sykesville	30	1730EST 1736EST			0	0	8K		Thunderstorm Wind
Howard County Northwest Portion	30	1735EST 1750EST			0	0	12K		Thunderstorm Wind
Carroll County Eldersburg	30	1736EST			0	0			Hail (0.75)
Baltimore County Owings Mills	30	1755EST			0	0	5K		Thunderstorm Wind

A fast-moving cold front, aided by another strong upper-level disturbance, concluded June's wild weather with one more severe weather episode - once again confined mainly to the northern tier of Maryland. Downburst and gust-front wind damage were the main severe weather types this day.

Wind damage began in Washington Co, when a tractor-trailer was blown over along Interstate 81 southwest of Hagerstown. Farther up the highway, at the junction of I-81 and I-70, a large tree was down, blocking some traffic. The same line of storms produced a wind gust to 58 mph at the Washington County Regional Airport near the Mason-Dixon Line. Smithsburg and Leitersburg, in eastern Washington Co, were hardest hit. Several trees and large limbs were damaged, and a shed, tiller, and swing set sustained damage at one residence. Numerous wires were blown down as well.

Farther east, in northwest Frederick Co, large limbs were knocked down near Thurmont, including one tree which barely missed striking bears at the Catoctin Mountain Zoo along federal highway 15. Damage at the zoo was estimated to be \$1,000. As the line bore down on Frederick city, several residents claim to have seen funnel clouds. However, only several large limbs were felled, and no trees were (reportedly) uprooted. Additional tree, limb, and wire damage occurred as the line headed into southern Carroll, northern Howard, and western Baltimore Cos. Heaviest damage was noted in northwestern Howard Co, where several roads were blocked by fallen trees and tree debris. A tree fell onto a house in Sykesville.

Power outages included at least 34,000 customers in the BGE service area, and perhaps hundreds of others in the Allegheny Power service area in western Maryland.

VIRGINIA, North

Fairfax County Tysons Corner	02	1808EST			0	0			Hail (0.75)
Fairfax County Great Falls	02	1823EST			0	0			Hail (1.00)
Frederick County 4 E White Hall	02	2022EST			0	0			Hail (0.75)
Clarke County 4 N Berryville	02	2050EST			0	0	10K	3K	Hail (1.75)
Clarke County Berryville	02	2050EST 2052EST	0.5	50	0	0	15K		Tornado (F0)
Loudoun County 3 E Middleburg	02	2104EST			0	0	10K	3K	Hail (1.75)



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Storm Data and Unusual Weather Phenomena



June 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured		Estimated Damage Property Crops		Character of Storm
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VIRGINIA, North

Loudoun County									
3 SE Bluemont to 4 SE Bluemont	02	2110EST 2114EST	1	50	0	0	10K		Tornado (F0)
Winchester (C)									
4 N Winchester	02	2200EST			0	0			Hail (1.00)
Clarke County									
Berryville	02	2210EST			0	0			Hail (1.00)
Prince William County									
Dale City	02	2210EST			0	0			Hail (0.88)
Fauquier County									
The Plains	02	2245EST			0	0	5K		Hail (1.75)
<p>The combination of an upper level disturbance, increasing atmospheric shear, and ample instability set the stage for a severe weather episode across northwestern Virginia during the evening. Individual mini-supercell storms contained large hail, damaging winds, and a few small tornadoes. The storms originated in eastern Ohio during the late afternoon and propagated through southwestern Pennsylvania, extreme northwestern Virginia, and portions of eastern West Virginia before scooting into northern Virginia.</p> <p>Two weak tornadoes, emanating from the same mini-supercell, struck in Clarke and Loudoun Cos. Damage was noted near Berryville (Clarke Co) in the form of several uprooted trees and an unroofed barn. In western Loudoun Co, tree damage indicative of a tornado was surveyed along Snickersville Turnpike (local route 734). Elsewhere in northern Virginia, the main culprit was large hail, ranging in diameter from three-quarters of an inch to golf ball (1.75 inches). Damage likely occurred to some crop fields - the hail, in most cases, lasted from 5 to 15 minutes.</p>									
Warren County									
North Portion	13	1319EST			0	0	10K		Thunderstorm Wind
Harrisonburg (C)									
Harrisonburg	13	1321EST			0	0			Hail (0.75)
Clarke County									
South Portion	13	1330EST			0	0	3K		Thunderstorm Wind
Fauquier County									
Upperville to Paris	13	1330EST			0	0	5K		Thunderstorm Wind
Greene County									
Geer to Quinque	13	1330EST 1335EST			0	0	3K		Hail (1.50)
Greene County									
2 S Quinque to Ruckersville	13	1345EST			0	0	3K		Thunderstorm Wind
Orange County									
Gordonsville	13	1345EST			0	0	3K		Hail (1.75)
Orange County									
South Portion	13	1345EST			0	0	3K		Thunderstorm Wind
Loudoun County									
Round Hill	13	1347EST			0	0	5K		Thunderstorm Wind
Charlottesville (C)									
Charlottesville	13	1355EST 1405EST			0	0	3K		Tstm Wind/Hail
Loudoun County									
Lucketts to Leesburg	13	1355EST 1410EST			0	0	10K	5K	Thunderstorm Wind
Loudoun County									
Middleburg	13	1355EST			0	0	2K	2K	Hail (1.75)
Loudoun County									
Leesburg	13	1412EST			0	0			Hail (0.75)



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June 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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VIRGINIA, North

Culpeper County									
Countywide	13	1415EST			0	0	5K		Thunderstorm Wind

Culpeper County									
Elkwood	13	1415EST 1420EST			0	0	75K	15K	Hail (2.50)

Fairfax County									
Herndon	13	1415EST			0	0			Hail (0.75)

Loudoun County									
Leesburg	13	1418EST			0	0	3K		Thunderstorm Wind

Stafford County									
Stafford	13	1425EST			0	0	5K		Thunderstorm Wind

Fairfax (C)									
Fairfax	13	1430EST			0	0	7K		Thunderstorm Wind

Falls Church (C)									
Falls Church	13	1430EST			0	0	7K		Thunderstorm Wind

Alexandria (C)									
Alexandria	13	1435EST			0	0	13K		Thunderstorm Wind

Fredericksburg (C)									
Fredericksburg	13	1435EST			0	0	10K		Thunderstorm Wind

Spotsylvania County									
North Portion	13	1435EST 1440EST			0	0	10K		Thunderstorm Wind

Albemarle County									
Scottsville	13	1440EST			0	2			Lightning

A vigorous upper-level disturbance acted upon increasingly warm and humid air near the surface to produce a squall line of strong to severe thunderstorms which traversed all of northern Virginia during the afternoon. Overall, damage was dominated by numerous downed trees, large limbs, and power lines, though there were scattered occurrences of large hail with the more intense cells. Localized small stream and poor drainage flooding was noted, but true flash flooding did not occur due to the rapid movement of the line.

Initial damage occurred across northwestern Virginia, where there were several instances of scattered trees and large limbs down across portions of Clarke, Loudoun, Warren, and Fauquier Cos. There were several citizen and police reports of funnel clouds in the area, but surveys determined that damage was straight-line in nature - either due to embedded microbursts or the gust front. Farther south, hail fell, most between three-quarters and one inch in diameter. However, at least one cell produced more substantial hail across Greene, Orange, and Culpeper Cos. In Elkwood (Culpeper Co), a wholesale greenhouse shop sustained considerable damage - broken glass and double-layered plastic - when hail, estimated at tennis-ball size, fell. Medium-sized limbs and twigs were blown off trees at the University of Virginia in Charlottesville.

As the storms raced east, more tree and power line damage was noted, in Fairfax, Arlington, Stafford, and Spotsylvania Cos. Damage appeared to be most significant in northern Spotsylvania Co. In Fredericksburg, one tree fell onto a car and another onto a garage; the wind blew over several tents at a local arts festival, damaging most of one vendor's work and about \$1,000 worth of pottery at another stand. Elsewhere in the county, a tree fell on a house and another fell onto a mobile home, each causing some damage. At least a half dozen large trees were reported down in Falls Church; several others were knocked down in Alexandria.

The combination of wind damage and lightning knocked power out to at least 56,000 Virginia Power customers in northern Virginia; several thousand other residents served by Allegheny Power and local electric co-operatives likely lost power in western Virginia as well. One notable lightning strike occurred on the James River just south of Scottsville (Albemarle Co); two youths were shocked while swimming to shore after "tubing". Each sustained only minor injuries, and were treated and released from the University of Virginia medical center.

Shenandoah County									
Woodstock to Maurertown	15	1400EST 1408EST			0	0	5K		Thunderstorm Wind

Shenandoah County									
Woodstock	15	1407EST			0	0			Hail (1.25)

Warren County									
Front Royal	15	1420EST			0	0			Hail (1.00)



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Storm Data and Unusual Weather Phenomena



June 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>VIRGINIA, North</u>									
Shenandoah County									
Woodstock to Toms Brook	15	1430EST 1530EST			0	0	35K		Flash Flood
Warren County									
3 SE Front Royal to Linden	15	1445EST 1456EST			0	0			Hail (0.75)
Fauquier County									
2 SE Upperville to Marshall	15	1510EST 1525EST			0	0			Hail (0.75)
Rappahannock County									
North Portion	15	1515EST 1530EST			0	0	3K		Thunderstorm Wind
Fauquier County									
Warrenton to Paris	15	1530EST 1540EST			0	0			Hail (1.00)
Warren County									
2 SW Front Royal	15	1530EST 1630EST			0	0	2K		Flash Flood
Prince William County									
1 W Hickory Grove	15	1543EST			0	0			Hail (1.00)
Fauquier County									
The Plains	15	1552EST			0	0			Hail (1.00)
Manassas (C)									
Manassas	15	1554EST 1604EST			0	0	2K		Hail (1.75)
Fairfax County									
Centreville	15	1556EST			0	0	3K		Thunderstorm Wind
Fairfax County									
Chantilly to Oakton	15	1556EST 1601EST			0	0	5K		Hail (1.75)
Fairfax County									
Burke to Annandale	15	1609EST 1615EST			0	0	15K		Hail (2.00)
Fairfax (C)									
Fairfax	15	1610EST 1630EST			0	0	15K		Lightning
Fauquier County									
The Plains	15	1615EST			0	0	3K		Thunderstorm Wind
Prince William County									
Greenwich	15	1617EST 1620EST			0	0			Hail (1.00)
Arlington County									
Central Portion	15	1620EST			0	0	5K		Thunderstorm Wind
Manassas (C)									
Manassas	15	1624EST			0	0	3K	2K	Hail (1.75)
Fairfax County									
Springfield to Franconia	15	1627EST 1632EST			0	0			Hail (1.00)
Alexandria (C)									
Central Portion	15	1630EST 1636EST			0	0			Hail (1.00)
Fairfax County									
Springfield to Mt Vernon	15	1631EST			0	1	15K		Thunderstorm Wind



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Storm Data and Unusual Weather Phenomena



June 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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VIRGINIA, North

Prince William County Dumfries	15	1634EST			0	0			Hail (1.00)
Rappahannock County South Portion	15	1635EST 1650EST			0	0	8K		Thunderstorm Wind
Alexandria (C) Central Portion	15	1636EST			0	0	20K		Thunderstorm Wind
Prince William County Triangle	15	1745EST			0	0	3K		Thunderstorm Wind
Stafford County Widewater	15	1755EST 1800EST			0	0	12K		Thunderstorm Wind
Nelson County East Portion	15	1935EST			0	0	25K		Thunderstorm Wind

The juxtaposition of a northward moving warm front, strong surface low pressure over the midwest, and a fast upper-level jet combined to produce another outbreak of severe weather - this coming two days after a notable episode over much of northern Virginia on the 13th. Once again, damage was highlighted by downed trees, large hail, and several cases of flash flooding. Much of the notable tree damage occurred over and east of the piedmont; flash flooding was seen over and west of the piedmont.

The episode was dominated by a single supercell which developed over the west central piedmont near the Blue Ridge and propagated east through Fauquier, Prince William, Fairfax, and Arlington Cos, as well as the independent city of Alexandria. Earlier cells caused scattered severe weather generally northwest of these areas.

The first event of consequence occurred in Woodstock (Shenandoah Co), where a localized storm dumped at least 2 inches of rain in 2 hours - on top of saturated soil - producing flash flooding in portions of town. Poor drainage and low-lying areas were hard hit, in some instances worse than the flooding in 1996 (associated with tropical storm Fran). A two-block area was evacuated. Included in this area was a barbecue catering company, which had some equipment washed out of the store. A small sport utility vehicle was washed up against a low-water bridge, with water cascading over the vehicle's roof. Several side streets were flooded, not only in Woodstock but in nearby Toms Brook as well.

As the storms tracked east, there were several reports of hail ranging from 0.75" to 1" in diameter. Additional flash flooding occurred in Warren Co, where a minor mud slide temporarily closed a portion of Browntown Road. Low-lying flooding closed the intersection of River and Harrell Road. Around this time, one thunderstorm cell became dominant as it crossed into Fauquier Co. Soon after, the storm exhibited a bow-echo feature, and accounts of damaging winds increased accordingly.

Large hail, ranging from 0.75" to 2" in diameter, fell across portions of Prince William and Fairfax Cos. Wind gusts knocked trees and large limbs down in Centreville. Heavier damage occurred as the bow-echo strengthened, in southern Fairfax Co and Alexandria. In Springfield and Mt Vernon, trees fell on two cars; one motorist was injured (in Springfield) but the other(s) escaped unharmed. Farther east, at least a dozen trees were felled in Alexandria; large limbs fell on power lines in the south portion of Arlington. Several more large limbs and/or trees fell alongside or onto the Capital Beltway. A bit farther south, numerous trees fell along federal highway 1 (west of Wide Water) in extreme northern Stafford Co.

A final event occurred in eastern Nelson Co, where several trees fell, including one onto a porch and another onto the roof of the same residence, causing substantial structural damage to the home.

In all, 31,000 Virginia Power customers lost power during the storms. Frequent lightning was also a problem, though there were no house fires, and no injuries were reported.

Augusta County Craigsville	16	1500EST			0	0			Hail (1.25)
Augusta County Craigsville	16	1500EST			0	0	15K		Thunderstorm Wind
Augusta County Churchville	16	1518EST 1530EST			0	0	25K	10K	Hail (1.75)
Augusta County West Portion	16	1518EST 1530EST			0	0	35K		Thunderstorm Wind



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June 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<u>VIRGINIA, North</u>									
Albemarle County Covesville	16	1527EST			0	0			Hail (1.00)
Madison County Wolfstown	16	1530EST 1545EST			0	0	50K	50K	Hail (2.75)
Albemarle County North Portion	16	1535EST			0	0	7K	10K	Hail (2.75)
Greene County Standardsville	16	1541EST			0	0	15K	8K	Hail (2.00)
Albemarle County 5 E (Cho)Charlottesville	16	1545EST			0	0	3K		Thunderstorm Wind
Harrisonburg (C) Harrisonburg	16	1550EST 1600EST			0	0	15K		Thunderstorm Wind
Rockingham County 3 S Linville to Broadway	16	1550EST 1600EST			0	0	25K		Thunderstorm Wind
Rockingham County South Portion	16	1550EST 1600EST			0	0	5K		Thunderstorm Wind
Madison County Madison	16	1600EST			0	0	10K	10K	Hail (1.75)
Culpeper County Culpeper	16	1601EST 1604EST			0	0	10K	5K	Hail (1.75)
Shenandoah County Woodstock	16	1604EST			0	0			Hail (0.88)
Culpeper County 1 N Jeffersonton	16	1607EST			0	0			Hail (1.00)
Albemarle County Northeast Portion	16	1620EST 1630EST			0	0	7K		Thunderstorm Wind
Frederick County Clear Brook to 2.5 NE Clear Brook	16	1635EST 1641EST	2.5	100	0	0	50K	50K	Tornado (F1)
Fauquier County Countywide	16	1641EST 1650EST			0	0	7K		Thunderstorm Wind
Loudoun County Middleburg	16	1642EST			0	0	3K		Thunderstorm Wind
Prince William County Quantico Mcas	16	1642EST			0	0			Thunderstorm Wind (G55)
Charlottesville (C) Charlottesville	16	1645EST 1655EST			0	0	7K		Thunderstorm Wind
Clarke County Berryville	16	1645EST			0	0	5K		Thunderstorm Wind
Fauquier County Markham	16	1645EST 1730EST			0	0			Flash Flood
Loudoun County Central Portion	16	1645EST 1700EST			0	0	200K		Lightning



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June 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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VIRGINIA, North

Prince William County									
Northwest Portion	16	1645EST			0	0	3K		Thunderstorm Wind
Fauquier County									
1 E Rectortown	16	1650EST			0	0			Hail (0.75)
Loudoun County									
Northwest Portion	16	1650EST 1700EST			0	0	15K	20K	Thunderstorm Wind
Stafford County									
North Portion	16	1650EST			0	0	5K		Thunderstorm Wind
Loudoun County									
Lovettsville	16	1655EST	0.5	75	0	0	10K	15K	Tornado (F0)
Orange County									
1 W Thornhill	16	1655EST			0	0	8K		Thunderstorm Wind
Fredericksburg (C)									
Fredericksburg	16	1715EST 1730EST			0	0	10K		Lightning
Fairfax County									
Ft Belvoir	16	1800EST			0	1			Lightning
Highland County									
Countywide	16	1800EST			0	0	15K	25K	Thunderstorm Wind
Highland County									
Monterey	16	1800EST			0	0			Hail (0.75)

Like a broken record, severe weather erupted again in northern and western Virginia - exactly one day after thunderstorms pounded many of the same areas. This time around, a cold front aided in triggering the episode, though upper-level wind shear was a major player in destabilizing the atmosphere much like it had done the previous day. Incredibly, the 16th would be the third out of four afternoons that severe weather had occurred in some portion of northern and western Virginia.

A comma-shaped line of thunderstorms - indicative of a mesoscale low pressure system - developed by the middle of the afternoon. The comma "head" curled from eastern West Virginia into western Maryland, then formed a line through western and central Virginia. Several tornadoes touched down in the vicinity of the comma head, from extreme northwestern Virginia through eastern West Virginia and northern and western Maryland; along the comma tail, individual cells produced large hail with some damaging wind gusts.

Damage to trees and wires occurred in many areas but, overall, was not quite as substantial when compared to that of the 13th. Nevertheless, several trees were uprooted, including one which fell onto an automobile, between Harrisonburg and Broadway (Rockingham Co). Numerous trees were reported down near Craigsville (Augusta Co). Farther east, trees were down in portions of Fauquier, Loudoun, and Prince William Cos. A late storm produced damaging winds across much of Highland Co; numerous trees and wires were knocked down.

A small tornado struck in and northeast of Clear Brook (northeast Frederick Co), uprooting at least 7 maple trees, smashing a storm window, flattening a barn, and snapping or uprooting 24 additional trees along Grace Church Road. The parent thunderstorm would continue into eastern West Virginia and western Maryland, producing additional tornadoes. Allegheny Power reported 2300 customers lost electricity in Frederick Co alone. Another small tornado touched down in Lovettsville, causing structural damage at one residence and felling numerous trees in a 200-300 ft. wide path. Straight-line wind damage (mainly to trees) was also noted in other areas of northwestern Loudoun Co.

The main severe weather culprit this day was large hail. Hailstones the size of baseballs dented cars, broke vehicle windows, and stripped paint and siding in portions of Madison, Augusta, Albemarle, Greene, and Culpeper Cos. In general, hail ranged from 1 to 2.75 inches in diameter. There were likely dozens of crop fields which sustained losses; a few residential gardens were wiped out by the large hail, which lasted 5 minutes or more in some locations.

Lightning also caused some damage. A home was set afire in Loudoun Co, causing an estimated \$200 thousand in damage. A security guard at Fort Belvoir (southern Fairfax Co) was shocked while opening a metal door; he was treated and released from the Army community hospital after slight numbness ensued. Other lightning damage was noted in Fredericksburg; one home was struck, sustaining minor damage; there were several instances of personal electronics equipment failures (as reported by a local repair shop).

Power outages were widespread; in all, Virginia Power reported approximately 64,000 customers without electricity in northern



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June 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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VIRGINIA, North

and western Virginia; Allegheny Power and several rural electric co-operatives reported at least 3,000 additional outages.

Highland County Monterey

19	0730EST 0800EST				0	0			Flash Flood
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Slow-moving thunderstorms along a warm front moving through central Virginia caused heavy rains over the western highlands. Rainfall of at least one inch on top of saturated soil produced flash flooding in Monterey which closed two roads.

Nelson County Faber

23	1455EST 1500EST				0	0			Hail (0.75)
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Nelson County Faber

23	1455EST 1500EST				0	0	2K		Tstm Wind/Hail
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Albemarle County 2 W Esmont

23	1515EST 1520EST				0	0	5K		Thunderstorm Wind
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Shenandoah County 1 SW Maurertown

23	1515EST				0	0	10K		Thunderstorm Wind
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Albemarle County 2 E White Hall

23	1540EST				0	0	5K		Thunderstorm Wind
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Madison County Madison

23	1545EST 1630EST				0	0			Flash Flood
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Charlottesville (C) Charlottesville

23	1550EST 1630EST				0	0			Flash Flood
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Culpeper County Elkwood

23	1600EST 1630EST				0	0			Flash Flood
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Charlottesville (C) Charlottesville

23	1605EST 1615EST				0	0	50K		Thunderstorm Wind
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Prince William County 2 N Bristow

23	2030EST 2130EST				0	0			Flash Flood
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Spotsylvania County Massaponax

23	2055EST 2130EST				0	0			Flash Flood
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A warm front, combined with another potent (for the season) upper-level disturbance, set the stage for strong to severe thunderstorms across the western piedmont and central Shenandoah Valley during the afternoon and evening. Severe weather, mainly in the form of thunderstorm winds, was confined to Albemarle and Nelson Cos. Heaviest damage was noted in the Charlottesville area, where dozens of trees and large limbs fell, several onto cars and a few onto homes. Another severe storm, containing estimated winds gusts between 60 and 80 mph, mangled tree branches and split other trees in two in Maurertown along local route 625. One of the trees fell onto a home, causing minor damage.

The storms, which moved rather slowly over saturated ground, induced flash flooding in several counties. Rainfall totals, ranging between 2 and 6 inches in the strongest storms, produced street flooding in Charlottesville and Madison. The town of Elkwood received 6.2 inches of rain which brought area creeks and small streams out of their banks. In Prince William Co, just west of Manassas, several low-lying areas were flooded, and a few streams overspilled their banks. Over an inch of rain in 20 minutes forced creeks out of their banks near Massaponax. The storms knocked out power to at least 12,500 customers in northern and central Virginia.

Highland County Monterey to Hightown

27	2132EST				0	0	7K	10K	Thunderstorm Wind
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A local severe thunderstorm knocked large trees and limbs onto federal highway 220 near Monterey. Additional limb and line damage was noted near the intersection of federal highway 250 and local road 600, with more damage seen across the southern portion of the county. Neighboring Bath Co. had more substantial damage.



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June 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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WEST VIRGINIA, East

Mineral County

3.4 SE Patterson Creek to 4.4 SE Patterson Creek	02	1936EST 1937EST	1	100	0	0	5K	10K	Tornado (F1)
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Hampshire County

2.5 W Donaldson to Levels	02	1937EST 1946EST	8	150	0	0	20K	100K	Tornado (F1)
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Hampshire County

Green Spg to Levels	02	1937EST 1943EST			0	0	5K	50K	Hail (1.75)
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Mineral County

5 SW Keyser to 3 E Burlington	02	2133EST 2146EST	10	150	0	0	150K	100K	Tornado (F2)
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Mineral County

New Creek	02	2133EST			0	0		3K	Hail (1.25)
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Hampshire County

2 NW Junction to 3 S Junction	02	2147EST 2151EST	5	150	0	5	100K	50K	Tornado (F1)
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The combination of an upper-level disturbance, increasing atmospheric shear, and ample instability set the stage for a major severe weather episode across portions of eastern West Virginia during the late afternoon and evening. The episode was highlighted by supercell thunderstorms which produced two multi-county tornadoes and several instances of large hail. For many residents of the Potomac highlands, the storms were a watershed event; the locals believed that tornadoes "like those in the midwest and Great Plains" could never strike.

The first twister, originally associated with a supercell which had produced a long (11-13 mile track) tornado in Somerset Co, Pennsylvania, re-emerged in extreme northeastern Mineral Co just east of Wagoner. The storm crossed into Hampshire Co, then passed an Allegheny Power substation before causing minor damage at some homes just north of Donaldson. Damage included a destroyed gazebo, stripped siding/trim from homes, and several uprooted or snapped trees. The tornado crossed River Mountain, causing damage primarily to forested areas. The path continued across the South Branch of the Potomac River before the tornado dissipated just outside the town of Levels.

The second tornado produced significantly more property damage. Initial reports of a funnel cloud over Bloomington, Maryland (Garrett Co) became prophetic as the first touchdown occurred 5 miles southwest of Keyser. Damage increased as the storm descended the Allegheny front range (Green Mountain). A car was blown over, a garage destroyed, and several trees were snapped or uprooted. A pine tree landed on one home, another home sustained minor damage, and a nearby mobile home had its skirting blown off.

The twister crossed New Creek Mountain, levelling numerous trees in heavily forested areas. Damage intensified after the tornado descended the mountain. One mobile home was destroyed - and, after the storm crossed federal highway 220, more tree damage was noted, as was minor damage to homes and extensive damage to outbuildings. The storm continued along federal highway(s) 50/220 to Ridgeville, rolling one mobile home, causing minor damage to nearby buildings, and destroying a barn near the Mill Creek Country Club just west of Burlington. From there, the tornado continued over Patterson Creek Mountain and into Hampshire Co, where several mobile homes were damaged or rolled along Davy Road. Five persons in one of the homes sustained minor injuries; only one accepted transport to a local hospital for head trauma. A station wagon was completely turned around and sustained minor damage. The twister then tracked three miles south of Junction, where it likely dissipated.

Hail was associated with each mini-supercell - and several residents, including fruit farmers, noted varying amounts of damage due to prolonged and, in some cases, sizeable hail. One grower reported total damage to his orchard (near Levels); other damage was seen in the form of stripped leaves and downed small limbs.

Conditions quieted after the final supercell (that which produced the second tornado) passed.

Hardy County

2 NE Oldfields	13	1220EST			0	0	5K		Thunderstorm Wind
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Jefferson County

Charles Town to Harpers Ferry	13	1400EST 1410EST			0	0	20K		Thunderstorm Wind (G56)
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A vigorous upper-level disturbance acted upon increasingly warm and humid air near the surface to produce scattered strong to severe thunderstorms across eastern West Virginia during the early afternoon. The individual cells eventually formed into a line, causing wind damage, large hail, and numerous power outages in northern Virginia and central Maryland. Two separate events were reported. The first was an area of downed trees and limbs near the South Branch of the Potomac River just north of Old Fields. The other was a measured wind gust of 65 mph in Jefferson Co. This cell also produced damage in the form of numerous downed trees and some wires. One tree fell onto a home near Harpers Ferry.



National Weather Service

Storm Data and Unusual Weather Phenomena



June 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

WEST VIRGINIA, East

The storms moved out of the area by mid afternoon.

Hardy County									
5 W Wardensville	15	1400EST			0	0	5K		Thunderstorm Wind

Hampshire County									
Countywide	15	1545EST 1700EST			0	0			Flash Flood

Isolated strong to severe thunderstorms developed across eastern West Virginia's Potomac highlands during the mid afternoon, knocking down some trees and large limbs along the Big Ridge west of Wardensville. A slower-moving area of storms caused flooding in portions of Hampshire Co; specifically, the intersection of Kirby and Rio roads was reportedly under water.

Berkeley County									
.5 SE Ridgeway to .5 NE Ridgeway	16	1643EST 1645EST	1	50	0	0	50K		Tornado (F0)

Jefferson County									
Southeast Portion	16	1655EST 1705EST			0	0	5K		Thunderstorm Wind

Berkeley County									
4 E Martinsburg to 4 NE Martinsburg	16	1708EST 1710EST	1	150	0	0	100K		Tornado (F1)

The approach of a cold front combined with impressive jet stream energy aloft acted on an unstable low-level atmosphere to produce a severe weather episode across eastern West Virginia for the second time in as many days. The combustible situation produced a mesoscale low pressure system which focused the most substantial severe weather in north-central Maryland and the eastern West Virginia panhandle. The episode featured two small tornadoes and one wind damage event.

The main event was a short-lived tornado which tracked through the small community of Swan Pond just east of Martinsburg. In Swan Pond Orchard, the tornado ripped a garage off the back of a home and knocked down eight miniature apple trees. The twister moved through a heavily wooded area, knocking down numerous trees before tracking across an open field where it tore the roof off a barn. It also flipped a trailer, moved a hay wagon, blew out doors to a hangar, and damaged a cinder block outbuilding.

This was the second tornado associated with the parent thunderstorm. The first, perhaps a continuation of one that had struck in extreme northern Frederick Co Virginia moments earlier, cut a brief path across extreme southern Berkeley Co near Ridgeway. Several trees were blown down, including one onto a mobile home and two more onto nearby homes. Interestingly, this same storm would spawn three more tornadoes in Washington Co, Maryland, a bit later.

In southeastern Jefferson Co, trees were knocked down along federal highway 340 near Harpers Ferry and along state route 9 just east of the Shenandoah River.

Pendleton County									
3 NW Ruddle	27	1030EST	0.3	50	0	0	8K		Tornado (F0)

A brief, small tornado whipped through a turkey farm, blowing a portion of the roof off of one turkey house, sucking the insulation out, and blowing two doors off their hinges. A portion of aluminum was found wrapped around a sycamore tree 35 feet from the house. Approximately 50 turkeys were discovered outside a nearby poultry house after its screen door was lifted off the ground.

Pendleton County									
North Portion	28	2230EST			0	0	2K		Thunderstorm Wind

A local severe thunderstorm knocked down large limbs across a couple of roads in northern Pendleton Co.