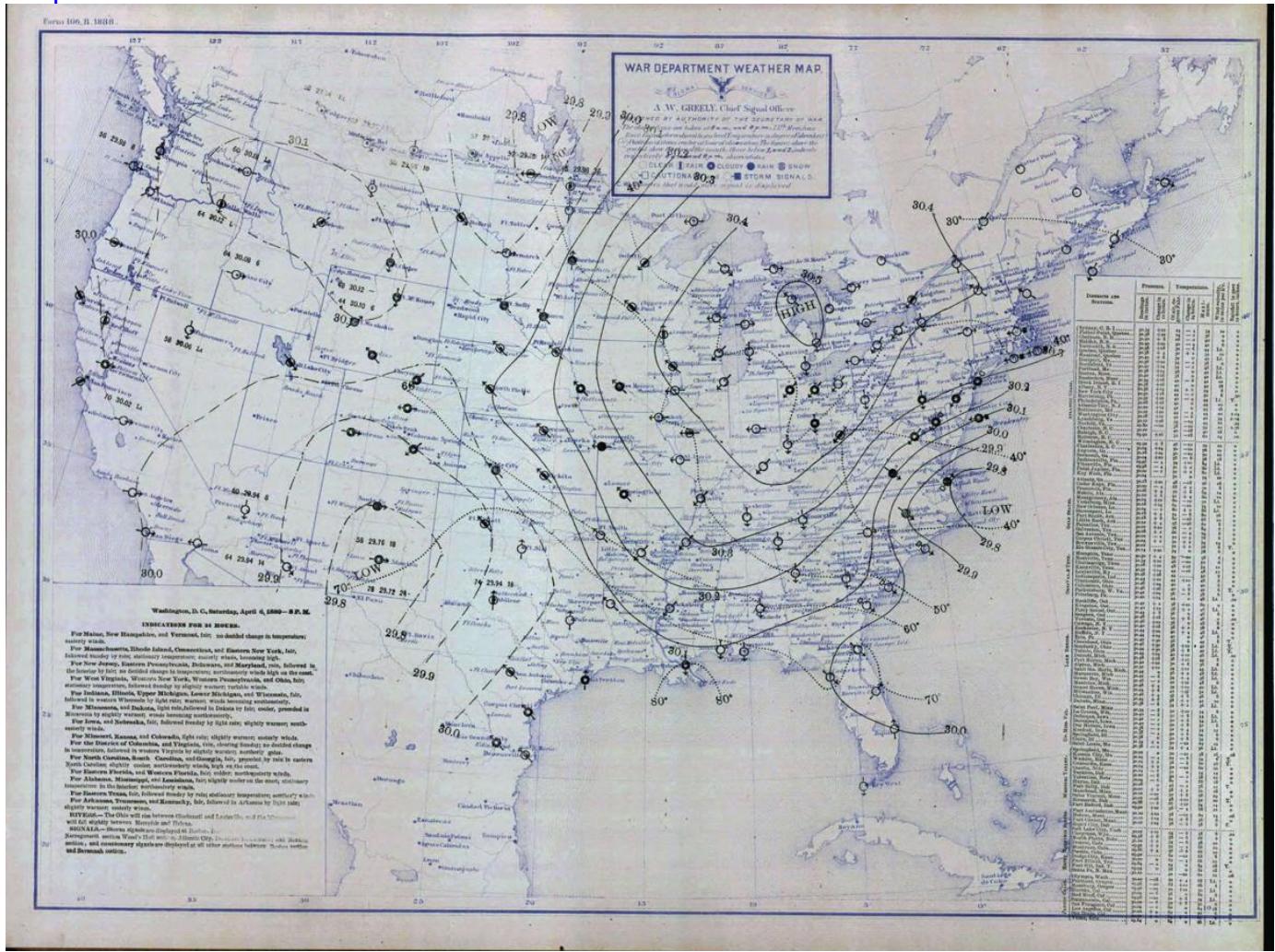


The forgotten April blizzard that devastated VA

By JOHN BOYER Richmond Times-Dispatch Apr 11, 2017

The blizzard of 1889 appears in this weather map created by the U.S. Army Signal Corps.



The round icons represent sky cover at cities with a weather observer: filled circles indicate overcast. The arrows show the direction the wind is blowing towards.

The faint dotted lines show the temperature pattern. The solid lines are isobars, or lines of equal barometric pressure. The low pressure appears near Cape Hatteras and high

pressure is centered over Michigan. The tightly packed isobars over Virginia are an indication of strong wind flow around the low.

NOAA Central Library Data Imaging Project

Once the dogwoods are in bloom, a crippling snowstorm is usually the last thing on the mind of Virginians.

The blizzard that hit the state with hurricane-force winds and heavy snow on April 6, 1889, was completely unforeseeable until it was too late. In towns from the Shenandoah Valley to the Chesapeake Bay, the oldest residents said it was the worst storm they could recall.

The winter leading up to the storm was fairly uneventful in Virginia. By early April, the fruit trees were in bloom and gardening was well underway.

On Friday, April 5, the midday temperature reached 61 degrees at the office of The Daily Times in downtown Richmond. The War Department's Signal Service called for "fair, slightly warmer; westerly winds" in Virginia over the next 24 hours.

President Benjamin Harrison, only one month into his term, was planning to sail from Washington to the Chesapeake Bay on April 6, for a fishing vacation with several Cabinet officers. He scrubbed the vacation at the last minute, partly because of his grandson's poor health.

It was ultimately very fortunate timing for President Harrison. But the weather had deteriorated so rapidly between Friday evening and Saturday morning that very few ventured out after daybreak anyway.

Overnight, an area of low pressure had swooped down from the Great Lakes and intensified over North Carolina. April 6 began with torrential rain and strengthening winds from the northeast across Virginia.

Richmond woke up to the sound of a thunderstorm in the pre-dawn hours, and rain and hail would pelt the city through the day.

During the morning, the rain switched to a blinding snowfall in western and Northern Virginia, with occasional crashes of thunder reported in Washington, D.C. Snow didn't begin in Richmond until the afternoon, as temperatures steadily dropped from the 40s to the 30s.

The snow fell faster than it could melt on the warm ground, leaving slush all over the streets of Richmond. There are no records for how deep the snowfall accumulation was around the capital city, but probably at least a few inches. Lynchburg and Washington observed a snow depth of 4 inches.

The heaviest snow fell in a swath between the Shenandoah Valley and Fredericksburg.

Winchester and Staunton saw 1 foot of snow cover the ground. Spotsylvania County reportedly had 18 inches of snow, and in Waynesboro, it drifted as deep as 2 feet. In Warrenton, a man who ventured out to gather firewood became lost and died of exposure.

The wind was far worse than the snow in the capital area. Roofs were torn off of homes and businesses in Richmond and Manchester. Trees and telegraph lines came crashing down and cut off communication with cities to the north.

The snow and wind continued to blast the state on Saturday night before clearing Sunday. The wind peeled back roofs at the Virginia Military Institute's barracks in Lexington and uprooted trees at the University of Virginia in Charlottesville. Near Farmville, a man died when his cabin was flattened by a gust of wind and the wreckage caught on fire.

In Hampton Roads, the storm was remembered as a hurricane because the wind and flooding was so devastating. Across Tidewater, the worst impacts arrived on Saturday night and Sunday. Several feet of water piled into Norfolk and Portsmouth, where it flooded warehouses and demolished wharves. A railroad line was wiped away by the Nansemond River in Suffolk.

At Cape Henry, winds gusted to 105 mph before the anemometer was blown away.

“The loss of life and damage to shipping in this vicinity, due to the storm, is unprecedentedly large,” noted the Monthly Weather Review of the United States Signal Service.

Recalling the previous day’s forecast, the Richmond Dispatch observed, “the wind did come and it came from the west, but the remainder of the prophecy was a dismal failure.”

“As a spring day yesterday was a howling success,” the newspaper remarked.

Only a few clues to explain the extreme storm

Without the benefit of observations from weather balloons and satellites, it’s hard to know the exact configuration of the weather pattern that spawned this storm.

It probably formed like nor’easters usually do: The confluence of an upper-level disturbance and a temperature gradient along the coast fueled a massive transfer of wind and moisture.

The available weather records, though sketchy, don’t show the presence of abnormally cold air in the region in advance of the storm. The air mass that swept into the Midwest behind the low was chilly, but not the arctic cold typical of winter.

Instead, the change from rain to snow during the storm — and the reports of thunder and hail — was probably from a process called dynamic cooling.

Essentially, the development of the storm itself makes the air colder. A rapidly strengthening low will cause a lot of air to ascend, and that air cools as it rises. Precipitation formed in the clouds as snow, but at some point melted into raindrops before reaching the ground. The melting process extracts some heat energy from the air around it, so the ambient temperature cools. If the rate of precipitation is very intense, the melting layer gradually gets lower and snowflakes will eventually reach the ground.

Virginia is no stranger to snow in April, but by then it's usually more of a novelty than a menace. A fleeting layer of slush that would barely get notice in February becomes a bit more memorable when it coincides with Easter weekend, like in 2007.

Weather watchers may also recall some minor accumulations of snow in Richmond during the month of April in 1990, 1982, 1971, 1964, 1957, 1953 and 1940. A 10-inch snowfall stands out on April 3, 1915, the biggest April snowstorm in the official records for Richmond.

The modern practice of keeping regular, official weather records was at its very infancy in the 1880s. The daily measurement of snowfall and temperatures in Richmond didn't formally begin until 1897.

Since then, Virginia has dealt with heavier snowstorms and plenty of nor'easters, but there hasn't been another April storm quite like that one.

Such an unseasonable and extreme storm would probably give modern forecasters plenty of headaches, too. We might get more time to prepare for it nowadays, but the idea of a blizzard in Virginia in April is always going to be a tough sell.