

WINTER STORM SUMMARY FOR JANUARY 22, 2005 TO JANUARY 23, 2005 EVENT

Synopsis

A very potent Alberta low pressure system produced heavy snow across all of Eastern Pennsylvania, the Maryland Eastern Shore, most of Delaware and New Jersey. This low pressure system moved southeast from southern Minnesota on Friday evening the 21st to near Dayton, Ohio around sunrise on Saturday the 22nd, to just south of Erie, Pennsylvania during the early afternoon of the 22nd. About the same time, a secondary low pressure system was forming over lower Chesapeake Bay. This would become the primary low as the 22nd and 23rd continued. The new low pressure system passed between the Delaware coast and the Delaware Bay Buoy at 5 p.m. EST on the 22nd. The low deepened rapidly from about a 1000 mb low at 1 p.m. EST on the 22nd to about a 983 mb low near the Nantucket, Massachusetts buoy at 7 a.m. EST on the 23rd. A cold dome of high pressure preceded this low with unseasonably cold air in place. This enhanced the baroclinic zone as there was a tight thermal gradient and an ever increasing low level jet. Aloft, a phasing of an arctic stream and northern stream short waves established a favorable diffluent flow aloft. The combination produced snowfall rates during the afternoon and early evening of the 22nd that averaged two inches per hour during the height of the storm. The closed upper low pressure system passed across central New Jersey during the morning of the 23rd. This prolonged the heavy snow into the morning across central New Jersey, the locations that received the heaviest snow from this event. Behind the intensifying low pressure system, extremely cold air moved into the region on the 23rd and 24th.

Watches/Warnings/Advisories

A winter storm watch for the entire region was issued at 3 p.m. EST on Thursday the 20th. A winter storm warning was issued for most of the region at 330 p.m. EST on Friday the 21st. The watch was continued across the lower Delmarva and extreme southeast New Jersey because of the uncertainty of how much of a changeover to rain was going to occur. That portion of the watch was upgraded to a winter storm warning at 5 a.m. EST on the 22nd. The winter storm warning was upgraded to a blizzard warning during the evening of the 22nd for the northern half of New Jersey along with Ocean County. A wind advisory was issued Sunday morning the 23rd for most of Delmarva and southern New Jersey and a wind chill advisory was subsequently issued for the entire region for the night of the 23rd and morning of the 24th. Along the coast, a coastal flood watch was issued during the evening of the 21st for New Jersey. A coastal flood warning was then issued from Ocean County northward during the afternoon of the 22nd. The anticipated tidal flooding was during the morning high tide of the 23rd. A storm warning was issued for the coastal waters north of Little Egg Inlet, New Jersey with a gale warning in effect elsewhere along the area waters. Preliminary results indicated that a winter storm occurred across much of the region except for coastal areas of Atlantic, Cape May and Sussex Counties. Blizzard conditions did not materialize. Wind gusts were below wind advisory criteria and wind chills reached near the criteria for advisories during the evening of the 23rd and morning of the 24th. Minor tidal flooding occurred along the northern New Jersey coast during the morning of the 23rd.

Precipitation/Temperatures/Winds

Snowfall accumulations across the Maryland Eastern Shore averaged between 4 and 9 inches. In Delaware, snowfall accumulations ranged from very little along the Sussex County shore to 9 inches across the northern part of the state. Around one-quarter of an inch of ice accrued on exposed surfaces in interior Sussex County. In Eastern Pennsylvania snowfall accumulations averaged between 8 and 14 inches with some lower amounts in Berks County. In New Jersey, snowfall accumulations averaged 10 to 18 inches across the northern half of the state, 9 to 14 inches across the southwest part of the state. In the southeast part of the state, accumulations ranged from 18 inches in northwestern Ocean County to next to nothing across coastal parts of Cape May and Atlantic Counties. The axis of heaviest snow extended from Philadelphia and Bucks Counties northeast through central New Jersey. Peak wind gusts behind the departing low pressure system averaged around 40 mph on the 23rd. This produced considerable blowing and drifting of the snow. On the coastal waters, gale force gusts occurred on the 23rd. Wind chill values during the night of the 23rd dropped to between zero and 15 degrees below zero in most places. Low temperatures on the morning of the 24th were in the single numbers with below zero low temperatures in parts of northeast Pennsylvania and throughout sheltered locations in New Jersey.

Significant Impacts/Aspects

A state of emergency was declared in New Jersey from 8 p.m. EST on the 22nd through 8 a.m. EST on the 23rd with a driving ban in effect. Icing on power lines caused outages in Sussex County, Delaware. Due to the fact that this event occurred on a Saturday into Sunday and was well forecasted, its impact was less than one would have expected or if it occurred during a week day.

Notes

Information contained in this summary is preliminary. More complete and/or detailed information may be contained in subsequent monthly NOAA storm data publications.