

Southern High Plains to Upper Great Lakes Winter Storm

26-28 December, 2018

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Meteorological Overview:

During the final week of 2018, a low pressure system tracked through the central Plains toward the Great Lakes and brought more than a foot of snow across the upper Midwest. The incipient low pressure system originated from the Pacific Ocean and moved across the southwestern U.S. on December 25. The low reached the southern High Plains on December 26 and began to deepen. Meanwhile, arctic air was surging southward through the central High Plains. The low pressure system then interacted with the arctic boundary and intensified more rapidly over the central plains on December 27, 2018. A swath of snow developed in the cold air mass immediately behind the arctic front where frontogenetic forcings were maximized. Blizzard conditions were experienced during this time across parts of central Nebraska to southeastern North Dakota where the snow became locally heavy in conjunction with north to northwesterly winds strengthening to gale force. The storm reached its peak intensity in the morning of December 27 when its central pressure attained a minimum of 994 mb. Conditions then gradually improved during the night on December 27 as the low pressure system began to weaken. Nevertheless, snowy and windy conditions persisted across the upper Midwest and the upper Great Lakes into the morning hours on December 28 before the winds gradually subsided and the snow tapered off during the day. Only scattered light snow showers remained across the Great Lakes by the evening on December 27 as the storm center moved into southeastern Canada.

Impacts:

The storm prompted blizzard warnings from western Kansas and eastern portions of the Dakotas into extreme western Minnesota. Up to a foot of snow was reported in Nebraska and North Dakota. The eastern portion of South Dakota received more than a foot of snow with a local maximum of 22.5 inches reported near Colman. The highest snowfall total occurred near Finland, Minnesota where 24 inches were reported. Wind gusts approaching 70 mph along with heavy snow resulted in blizzard conditions across parts of central Nebraska to southeastern North Dakota. In the morning of December 27, Minnesota State Patrol reported that 270 vehicle crashes occurred across the state, 20 of which caused injuries, though none were fatal. Kansas State Highway Patrol reported a weather-related death on Interstate 70 near Oakley due to a crash involving a commercial vehicle and a passenger car. In Nebraska, whiteout conditions and crashes forced the closure of Interstate 80 between Lexington and North Platte. Meanwhile, moisture streaming northward from the Gulf of Mexico ahead of a cold front brought flooding rains and severe weather across the Deep South. A woman in Ponchatoula, Louisiana, died after a tree fell on her camper trailer.