

Tornado & Large Hail Event: August 24, 2006

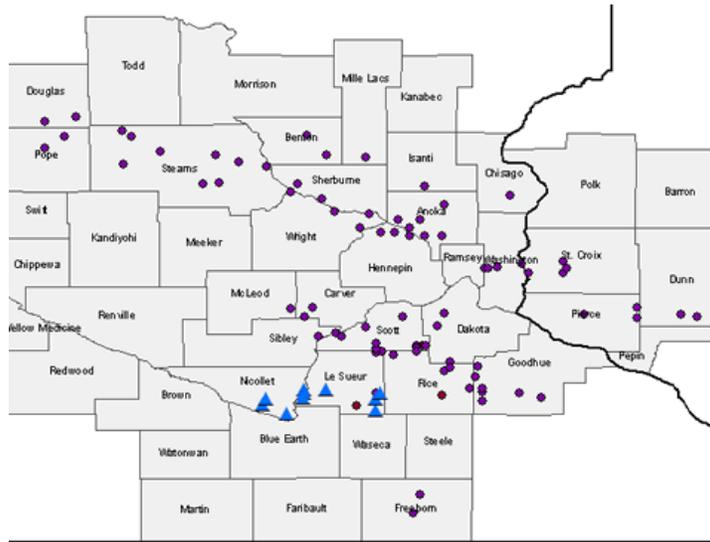
Widespread severe thunderstorms occurred over central and southern Minnesota and western Wisconsin on August 24th. Thunderstorms developed during the mid-morning hours, producing large hail (up to the size of baseballs and grapefruits in some locations) from locations just to the southwest of the Twin Cities over toward the city of Northfield. During the afternoon hours, additional thunderstorms developed, producing widespread reports of large hail as well as a long-lived F3 tornado in southern Minnesota.

Tornadoes from August 24th, 2006

Tornado #1: Brown County, rated F0. This tornado was on the ground for one-half mile, from 2.5 miles north of Searles to 3 miles southeast of New Ulm. It tore across corn and bean fields, and crossed both highways 15 and 68. Two semi-trucks were blown off of highway 15, leading to 2 injuries. The tornado was on the ground from 5:08 PM to 5:12 PM, and had a maximum width of 30 yards.

Tornado #2: Nicollet and Le Sueur Counties, rated F3. This tornado was on the ground for 33 miles. It tracked from 4 miles west-southwest of Nicollet, through the town of Nicollet, to the southern outskirts of St Peter, across the northern part of Kasota, to Lake Emily, then to 4 miles northwest of Waterville. The tornado killed one person and injured 37. It was on the ground from 5:30 PM to 6:25 PM. This tornado was on the ground longer than any other Minnesota tornado since the outbreak of March 29, 1998.

Storm Reports from August 24th, 2006

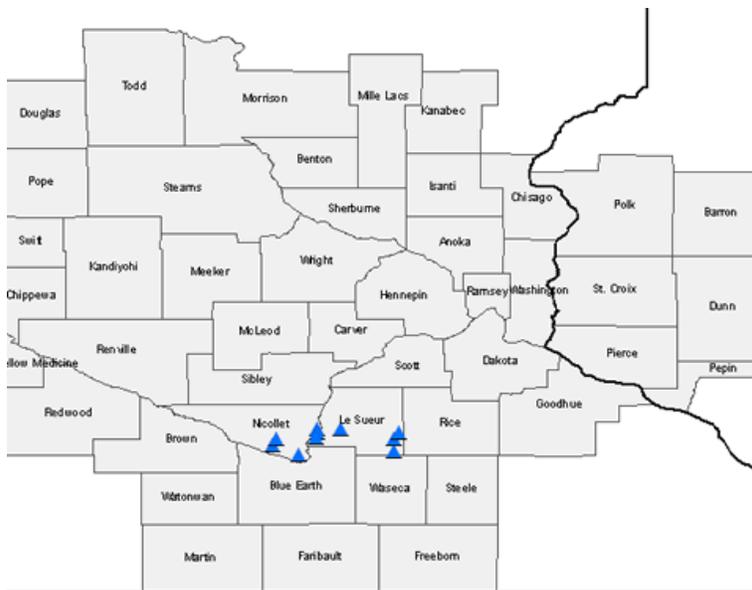


Storm Reports: August 24, 2006

- ▲ Tornado Reports
- Hail Reports
- Wind Reports



Severe weather summary for August 24th, 2006

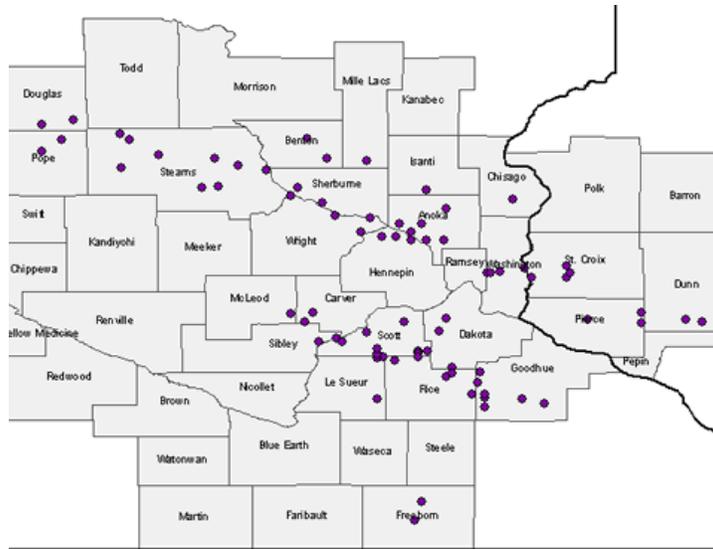


Tornado Reports: August 24, 2006

- ▲ Tornado Reports



Tornado reports from August 24th, 2006



Hail Reports: August 24, 2006

● Hail Reports



Large Hail reports from August 24th, 2006



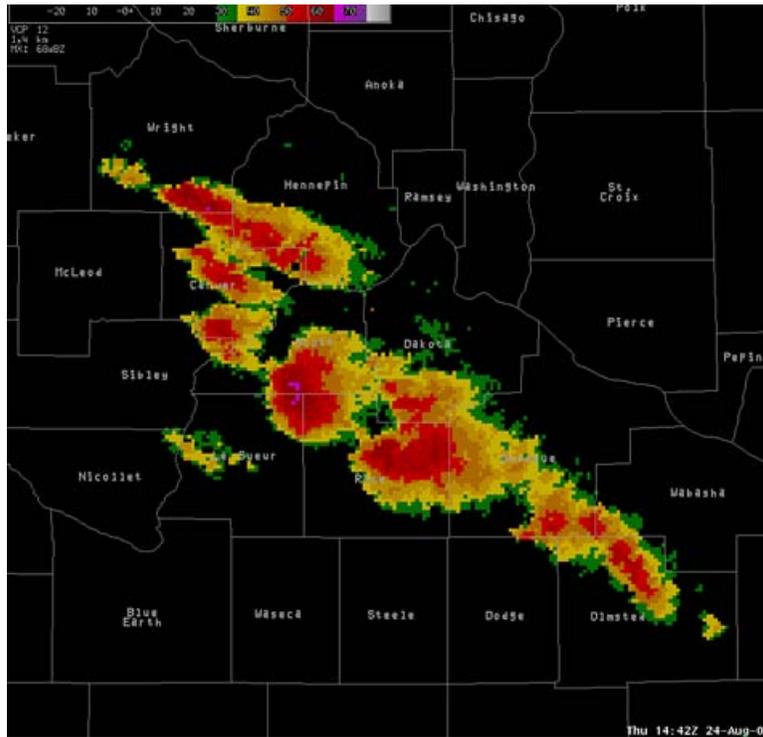
Damaging Wind Reports: August 24, 2006

● Wind Reports

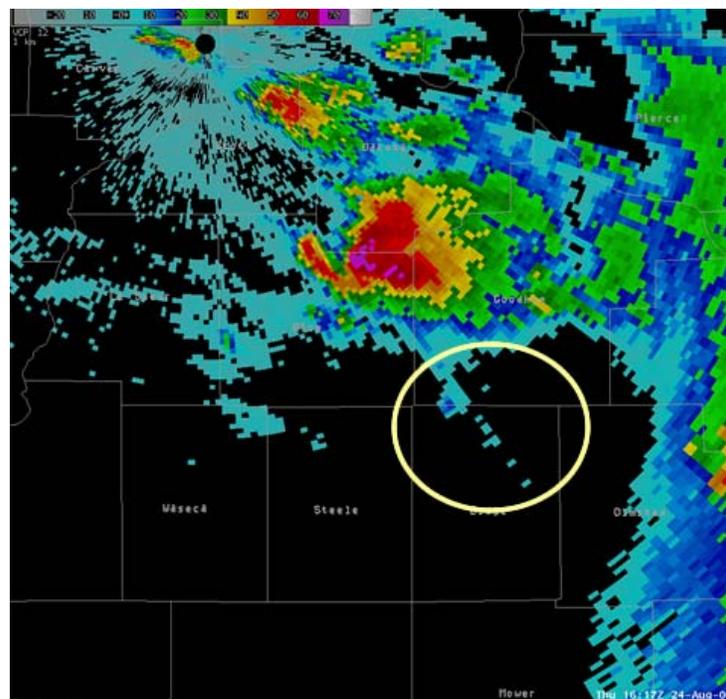


Damaging Wind Gust reports from August 24th, 2006

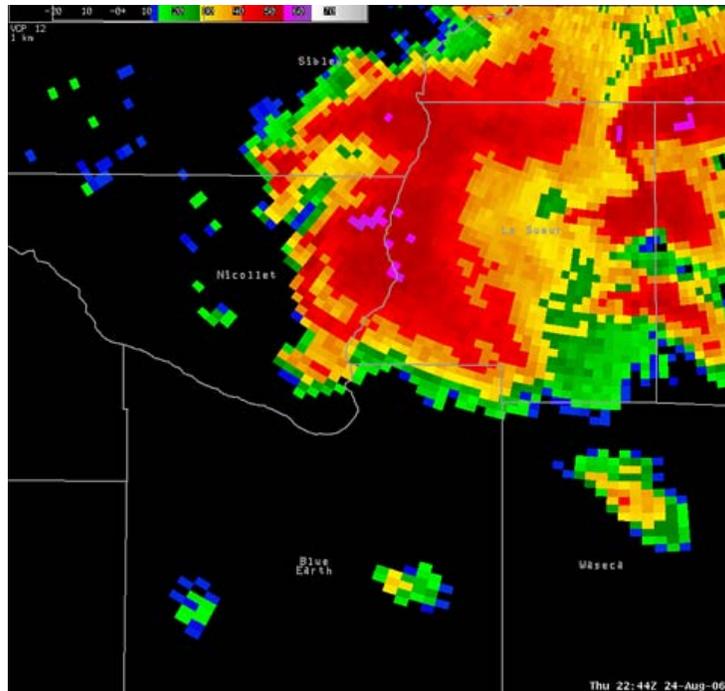
Radar Images from August 24th, 2006



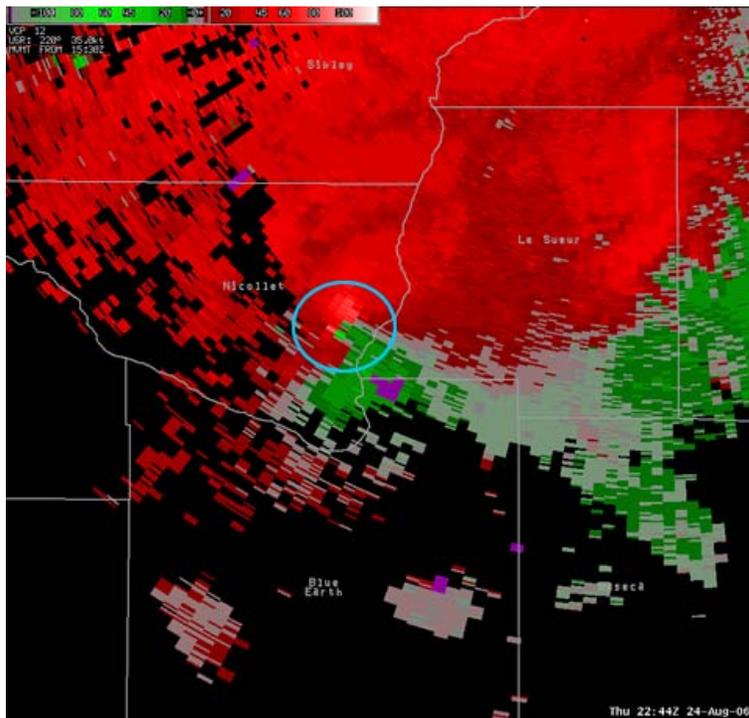
Composite reflectivity image from 9:42 AM CDT, showing thunderstorm near New Prague. This storm produced grapefruit-size hail.



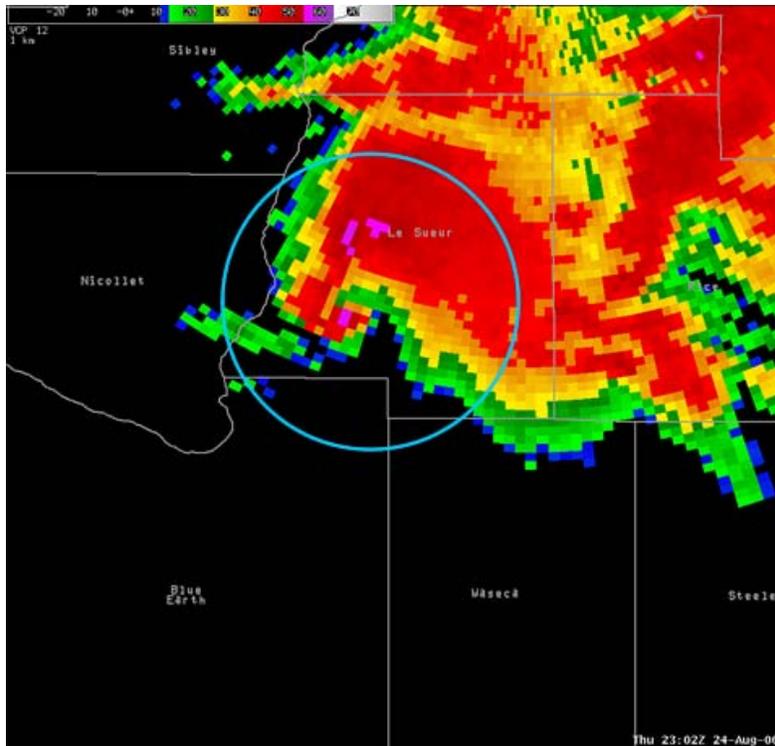
Reflectivity image of thunderstorm which produced large hail in Northfield. Time of image is 11:17 AM CDT. Area circled is a "three-body scatter spike", typical of storms producing large hail.



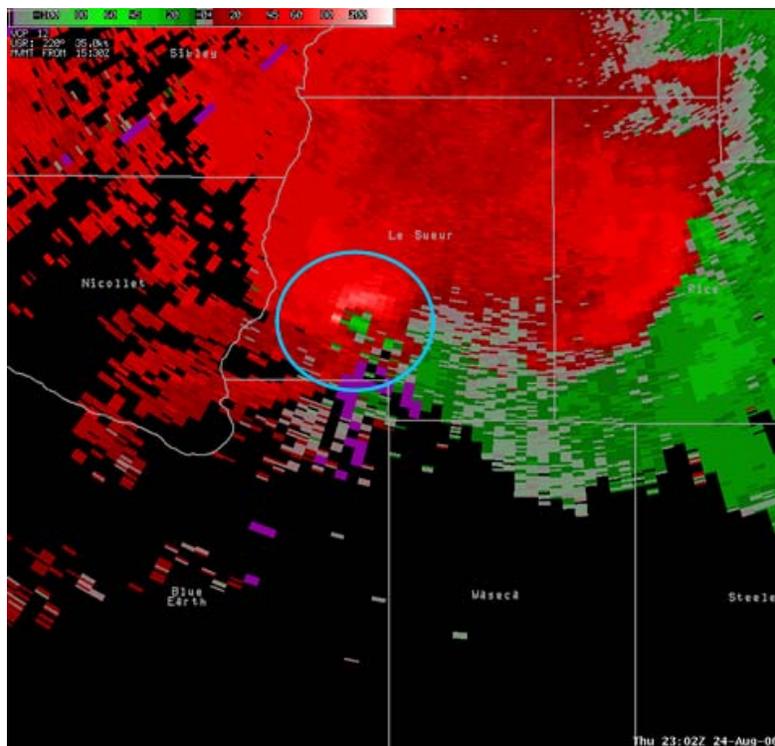
Reflectivity image from 5:44 PM CDT, of tornadic thunderstorm located between Nicollet and St Peter in Nicollet County.



Storm-relative velocity image from 5:44 PM CDT, of tornadic thunderstorm between Nicollet and St Peter. Area circled indicates strong circulation in storm (red color is outbound motion, green is inbound).



Reflectivity image from 6:02 PM CDT, of tornadic thunderstorm located near Cleveland, in Le Sueur County.



Storm-relative velocity image from 6:02 PM CDT, of tornadic thunderstorm near Cleveland. Area circled indicates strong circulation in storm. (red color is outbound motion, green is inbound).

Storm Damage Photos from August 24th, 2006



This photo was taken in the south central portion of the city, where the tornado produced F0 damage.



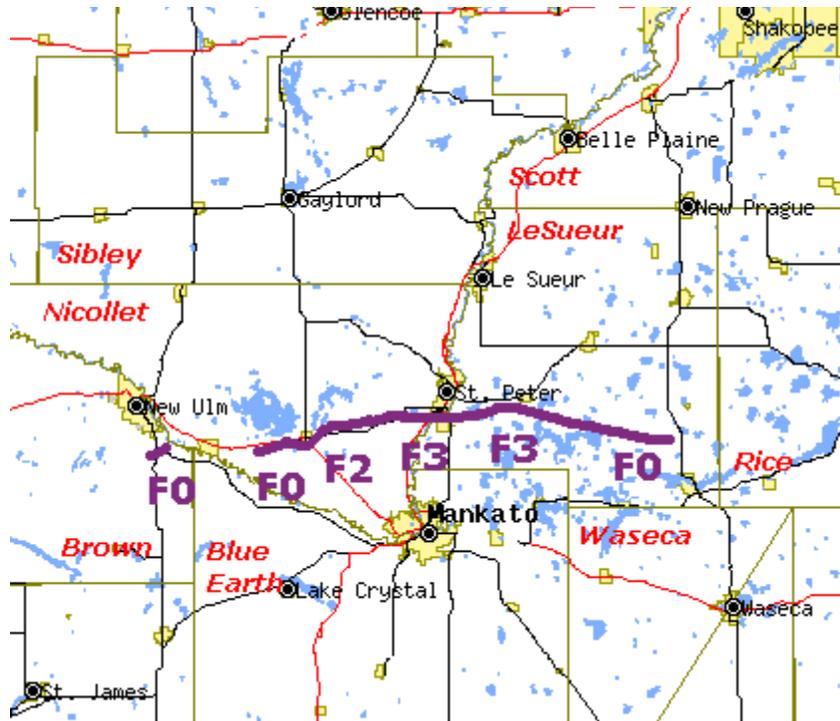
This house suffered F3 damage. Having heard the warning, both occupants were in the basement. Note the door to the basement at the bottom of the steps. A car parked in the garage was rolled about 25 feet before being rammed into a tree.



One of the oddities of this tornado is shown here. The vehicle was not rolled or sent airborne into the field, but rather was pushed along, remaining upright during its 100 yard journey into the corn.



This house also suffered F3 damage. Having heard the warning, six people were in the basement, and only one injury occurred. Grain bins and outbuildings were destroyed, and a vehicle in the garage was rolled about 100 feet.



Examination of photos and video, along with damage surveys (both ground and aerial), led to the determination that there were two tornadoes in southern Minnesota on August 24, 2006.

The first, just southeast of New Ulm, touched down at approximately 5:08 p.m., was rated F0, and remained on the ground for only one-half mile. It crossed Highway 15 where it blew two semis off the road, resulting in two minor injuries. The tornado then moved over Highway 68 before dissipating.

The second tornado touched down four miles west-southwest of Nicollet at about 5:30 p.m. It did not dissipate until 6:25 p.m., four miles northwest of Waterville. Rated an F3, and occasionally as wide as one-half mile, this multiple-vortex tornado remained on the ground for 33 miles as it crossed Nicollet and Le Sueur Counties. The 33 mile path length was longer than any tornado in Minnesota since the 67 mile long F4 on March 29, 1998, that devastated Comfrey and rural areas. The 1998 outbreak also had an 18 mile long F3 tornado that swept through St. Peter with a path eerily similar to the one on August 24, 2006.

Aerial Damage Survey Photos



This image shows the location where the F3 tornado began its devastating journey across Nicollet and Le Sueur Counties. Damage to beans was first visible in the top center of this picture. The tornado moved northeast, toward the lower left portion of the picture, tearing through a corn field and then barely missing a farmhouse. At times the path was very narrow, no more than 10 feet wide according to our ground survey, while at other times it expanded to about 100 feet wide.



After missing the farmhouse shown in the first picture, the tornado continued moving northeast. In this photograph, it trekked from the right center portion of the picture, crossed Highway 14, barely missed a hog barn, and then made a turn toward the southeast. Its path is last seen in the left center portion of the picture. Note that the tornado has a wider path than when it first touched down.



Continuing to move southeast, it crossed Highway 14 again, barely missing another commercial operation. In this image, the tornado moved from the right center portion of the picture to the upper left



The tornado crossed Highway 14 a third time, then produced F0 damage as it traveled from the southwest portion of Nicollet to the east central edge of the city. In this photograph, taken over the eastern edge of Nicollet, it strengthened and produced F2 damage just as it exited the city. Several structures were hit hard near the intersection of Highway 99 and County Road 72 (which is the road that makes a 90 degree curve before it intersects with Highway 99). The tornado then continued moving east, tearing through another corn field.



Photographs and video from chasers and spotters show the tornado was clearly multiple vortex, and this photograph overlooking a field indicates that as well. The semi-circular whitish-tan areas depict the cycloidal marks of the various suction vortices. In this image, the tornado was moving straight east, from the right center to the left center of the photograph. About two miles later, it strengthened to F3 and virtually leveled a home just outside the southwest city limits of St. Peter.



One of the hardest hit areas was the south side of Lake Emily in Le Sueur County. F3 damage was noted here as well. This was only about two miles after it crossed the Minnesota River and hit the north edge of the city of Kasota.



Still moving essentially from west to east, the tornado path can be seen from the right center portion of the photograph to the left center. More cycloidal marks from the multiple vortex tornado are evident in this corn field.



Photos of the tornado showed it becoming quite narrow and "roping out" as it neared the end of its 33 mile journey. This image shows the last of the damage path before the tornado dissipated. The narrow path can be seen in the lower center portion of the picture, paralleling the road (perhaps only about 50 feet from the road) before crossing a driveway and dissipating just after hitting a line of trees in the lower left portion of the photograph.