

South Dakota Blizzard of 2013

Overview

On October 3, 2013, blizzard conditions fell upon northwestern South Dakota, bringing 70 mph gusts and up to 44 inches of snow in Lawrence County. This type of event was unprecedented for the area. The snow from this storm accounted for 20% of the average annual precipitation for SD. Rapid City received two feet of snow, which set a record for October. This blizzard was early for snowfall in the area, and was part of a larger storm complex in the Plains that produced a tornado outbreak throughout Nebraska and Iowa. The early storm caught cattle ranchers off guard, with tens of thousands of heads of cattle killed as they were unprepared for the very harsh conditions. Some ranchers lost over half of their herds.



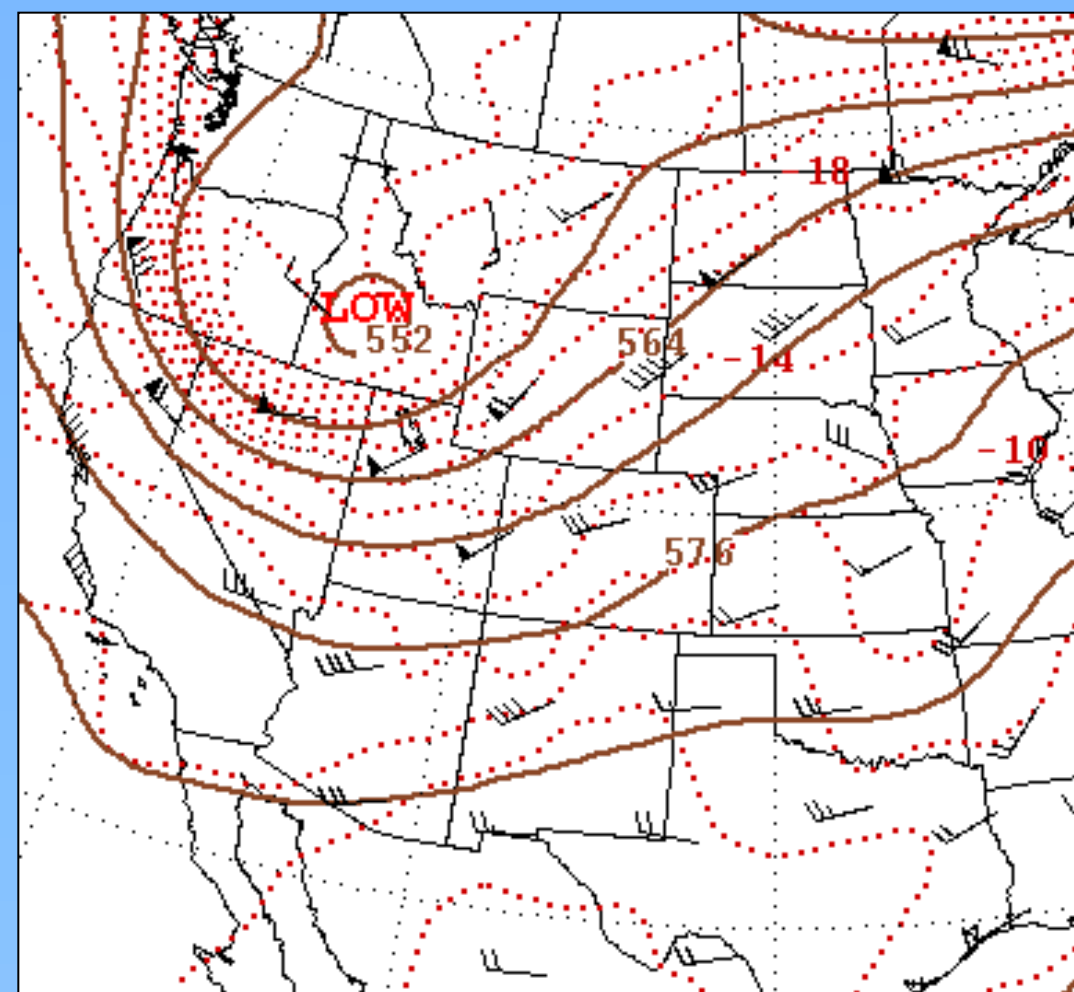
Weather Underground

A cleared street after the storm in Rapid City, SD

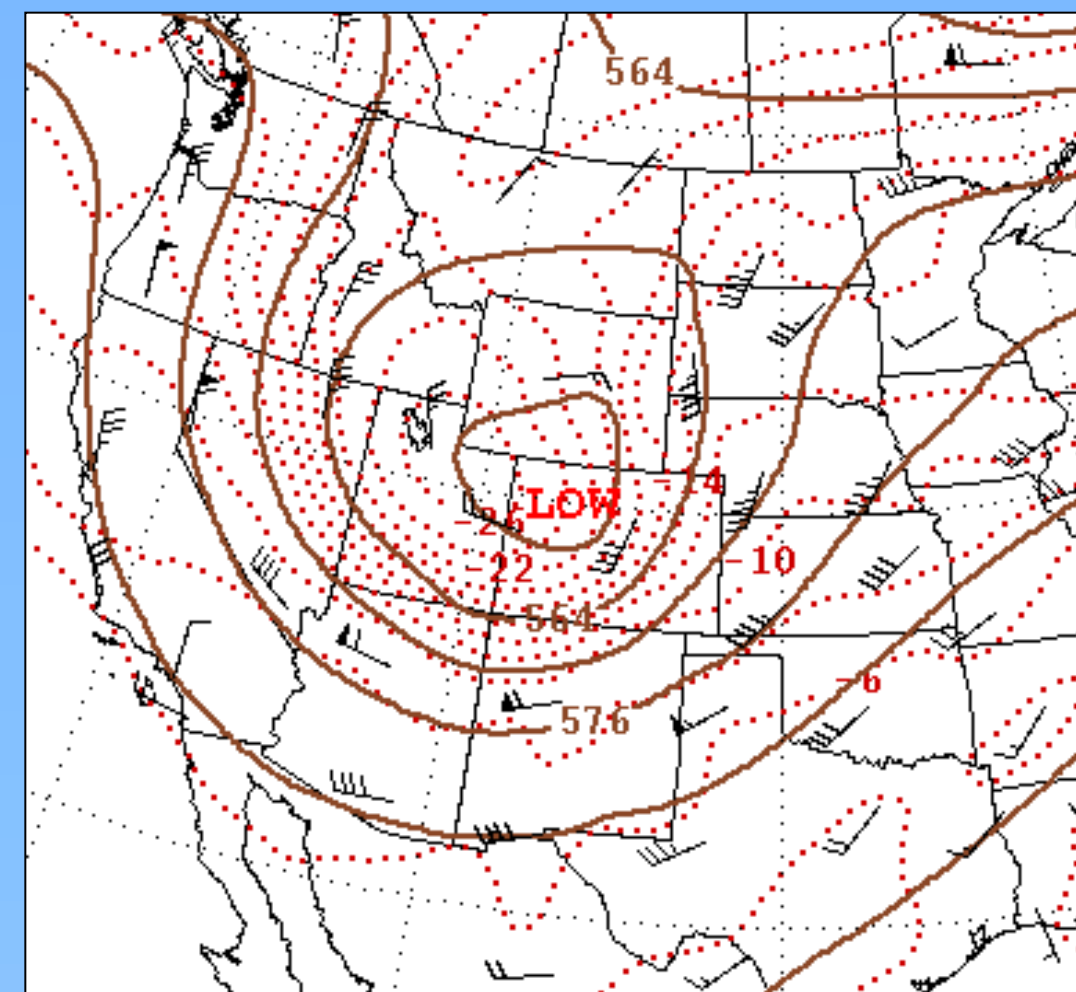
"This is very powerful storm, it's the perfect pattern for us to get heavy snow and strong winds. The snow will be heavy and sticky, and it looks it will be coming down sideways."

-Jeff Schild, NWS Rapid City meteorologist

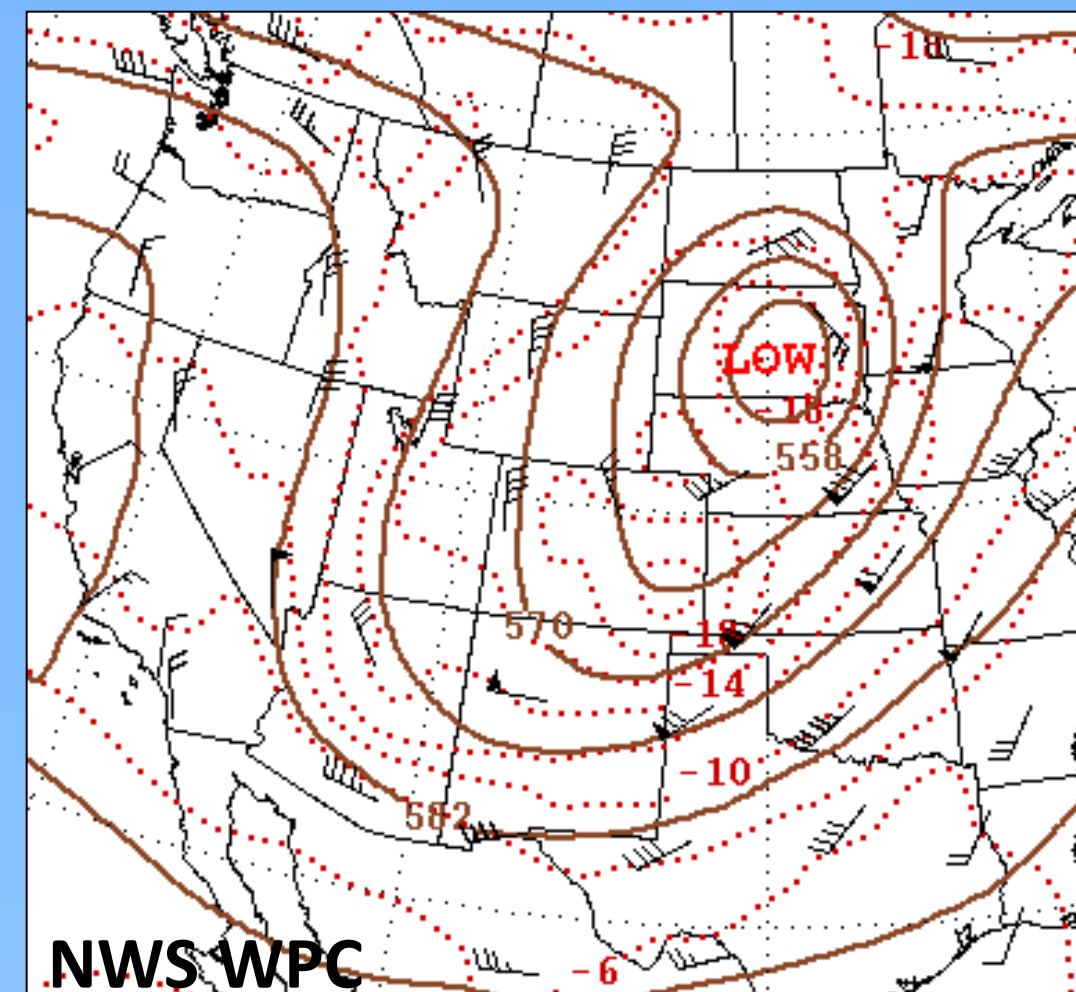
October 3



October 4



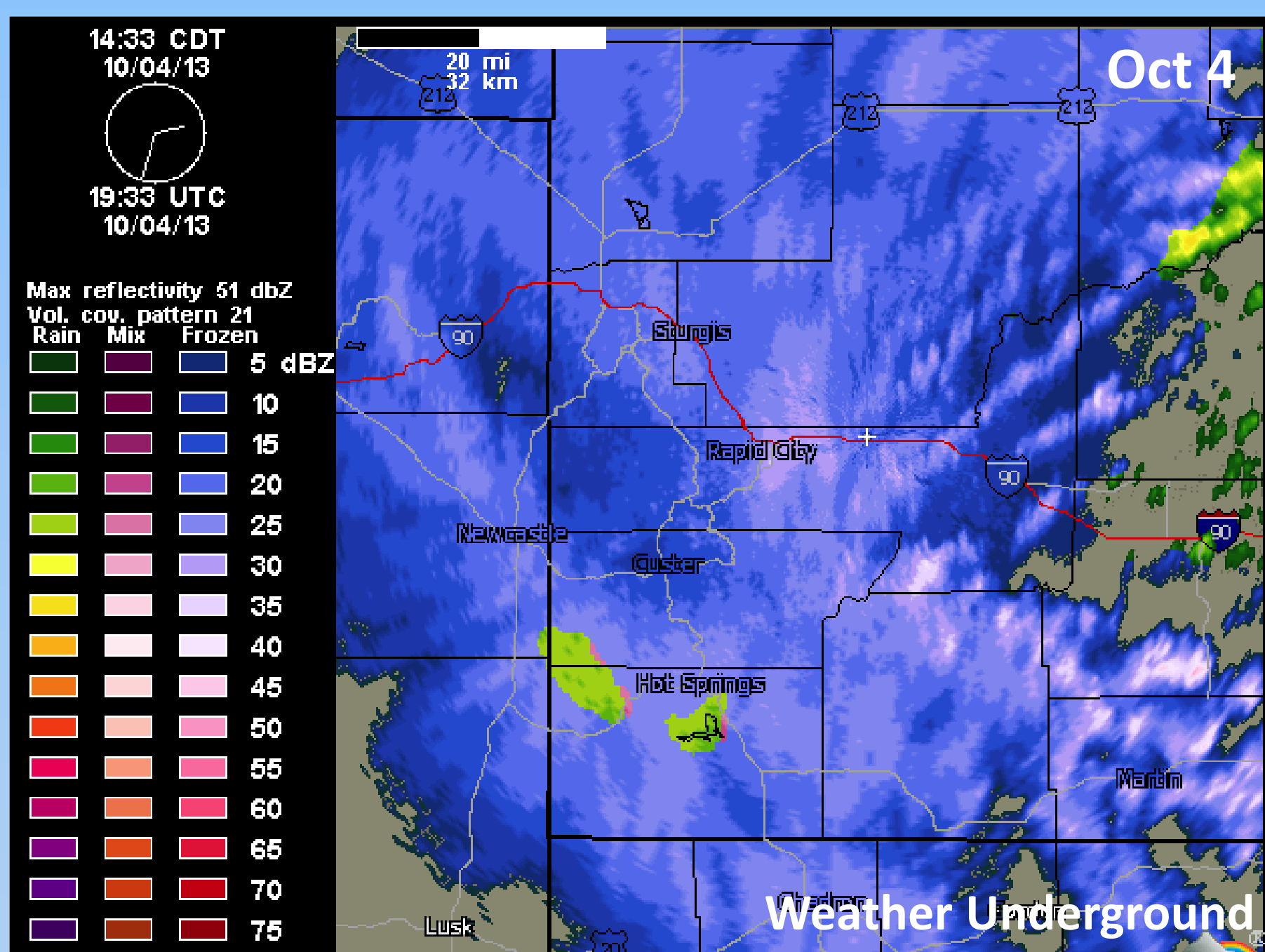
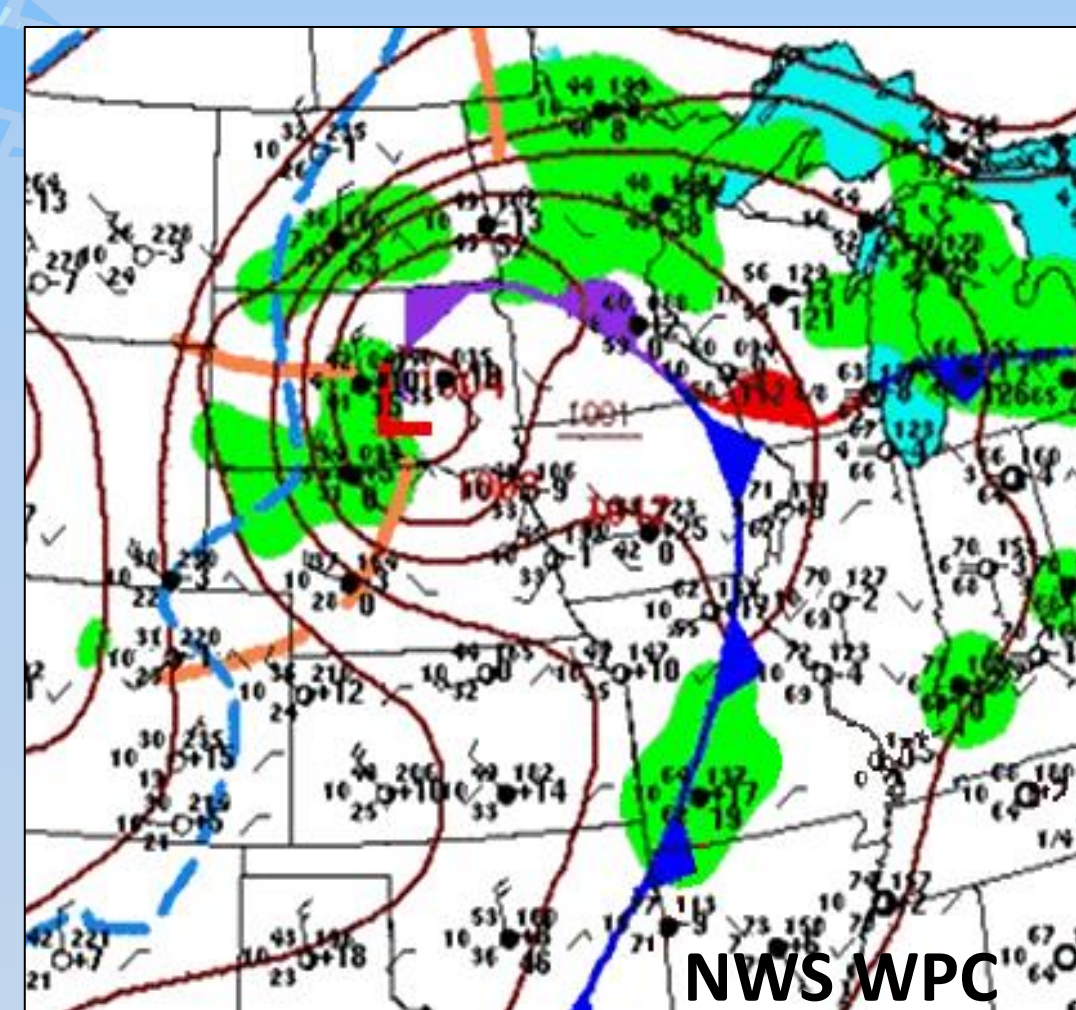
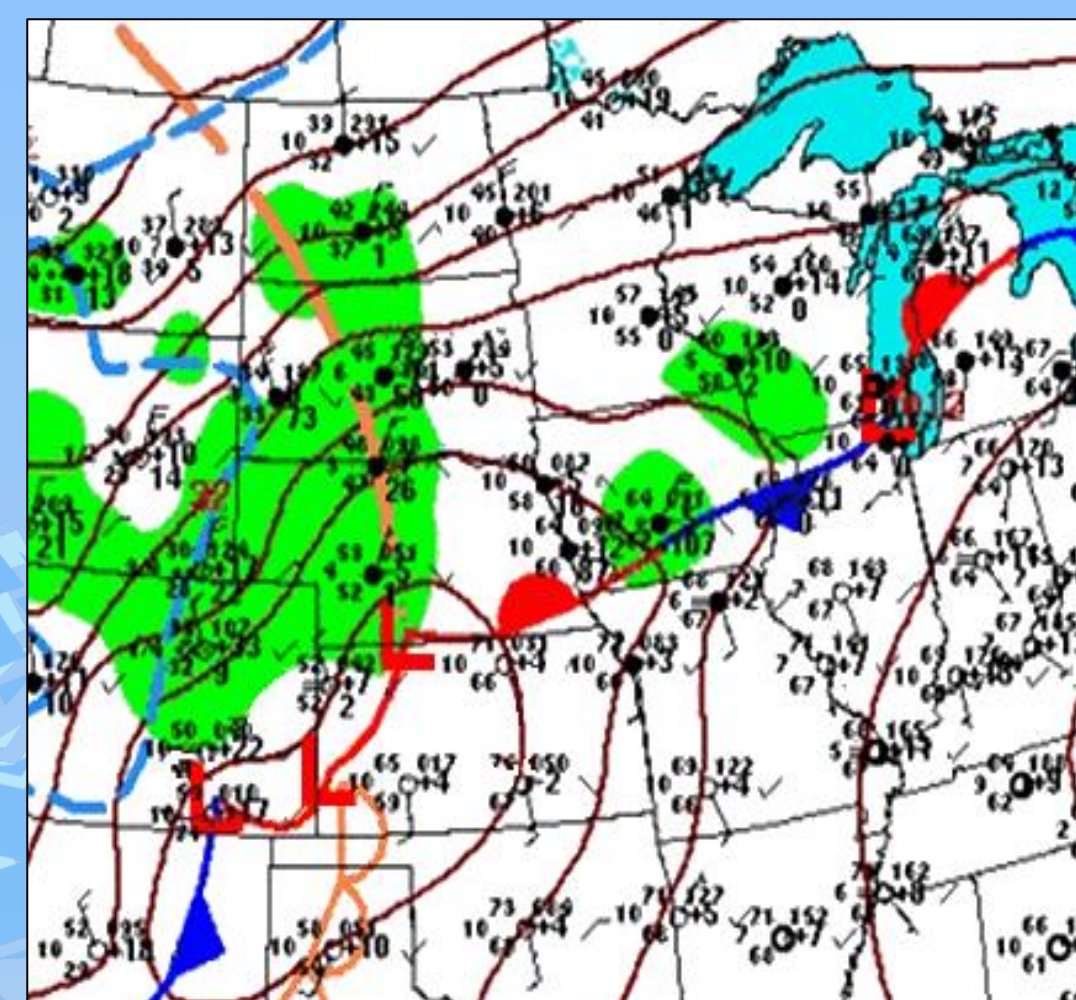
October 5



Rapid deepening of 500 mb upper low (above) on Oct 3-5 and surface low on Oct 3-4 (below)

Meteorological Overview

The National Weather Service in Rapid City originally issued a winter storm warning on October 3 for Rapid City and the Black Hills near the border with Wyoming for 9 to 12 inches of snow and wind gusts up to 40 mph. As the surface low developed rapidly and moved into South Dakota, the forecast was revised to a blizzard warning for strong wind gusts and near zero visibility conditions. A persistent band of very heavy snow occurred west and northwest of the low. Snow continued in the Rapid City area on October 4, with another 1.5 feet on top of the previous day's snow. The final snowfall total for the city was 23.1 inches, the second highest total on record, with higher amounts just to the west. The storm finally moved away on October 5.



Rapid City Doppler radar showing intense snowfall



Keloland

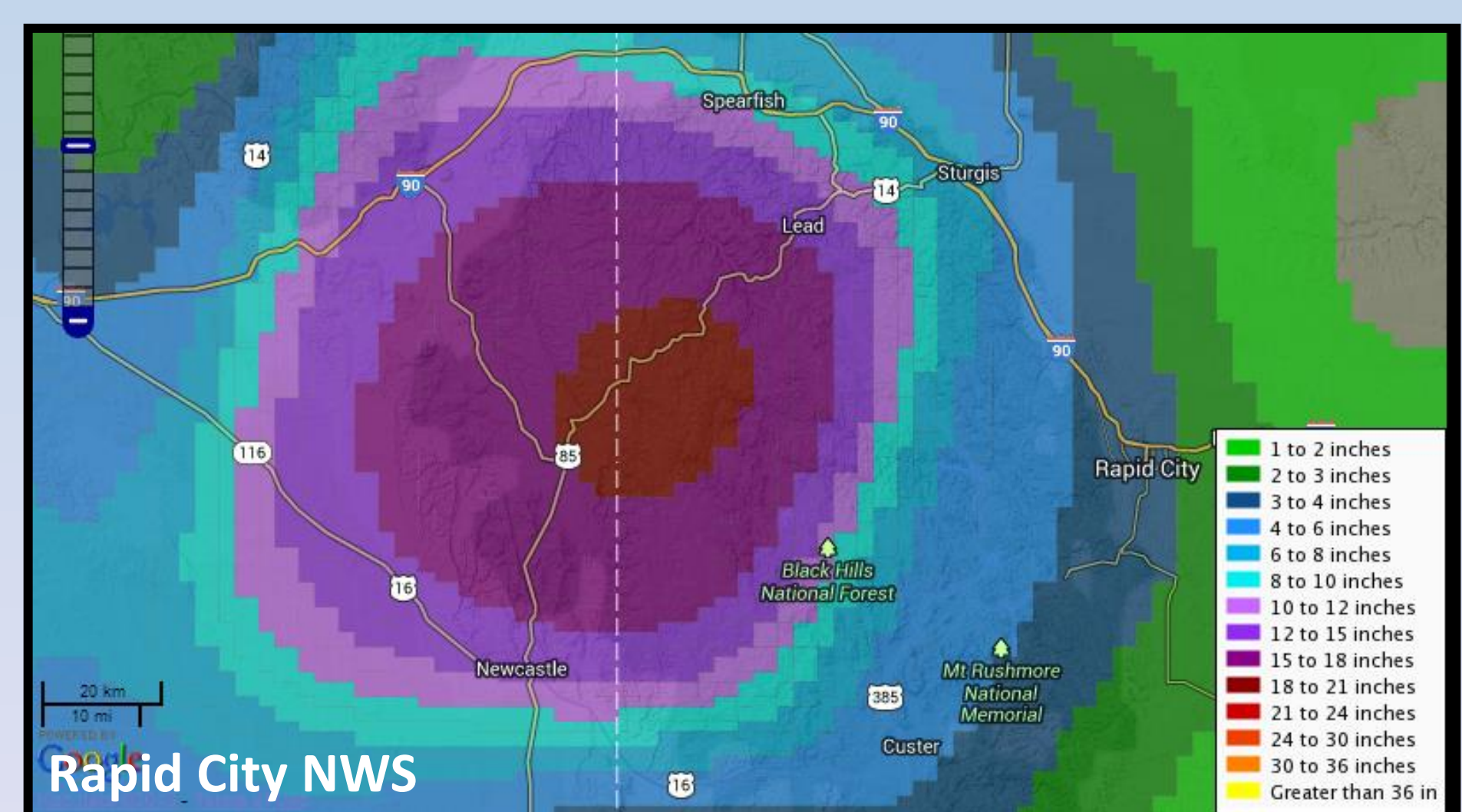


The Guardian



Indian Country Today

Livestock dead in the snow in Pierre, SD. According to the U.S. Department of Agriculture, cattle make up a quarter of the state's \$24 billion agriculture industry



Snowfall totals through Oct 4 just west of Rapid City

Impacts

- ▶ Tens of thousands of heads of cattle lost, each costing around \$2,000 to replace
- ▶ 15 to 20 percent of all cattle in state killed
- ▶ Severe economic impact on rancher livelihood
- ▶ 3 people dead in a motor vehicle accident
- ▶ Loss of power for up to a week in rural areas
- ▶ Hundreds of travelers stranded

"It's going to be a huge economic hit. To have such huge, widespread losses and devastation is really something that historically not a lot of people have ever seen before."

-Silvia Christen, executive director of the South Dakota Stockgrowers Association

Bill Meyer
University of Louisville