



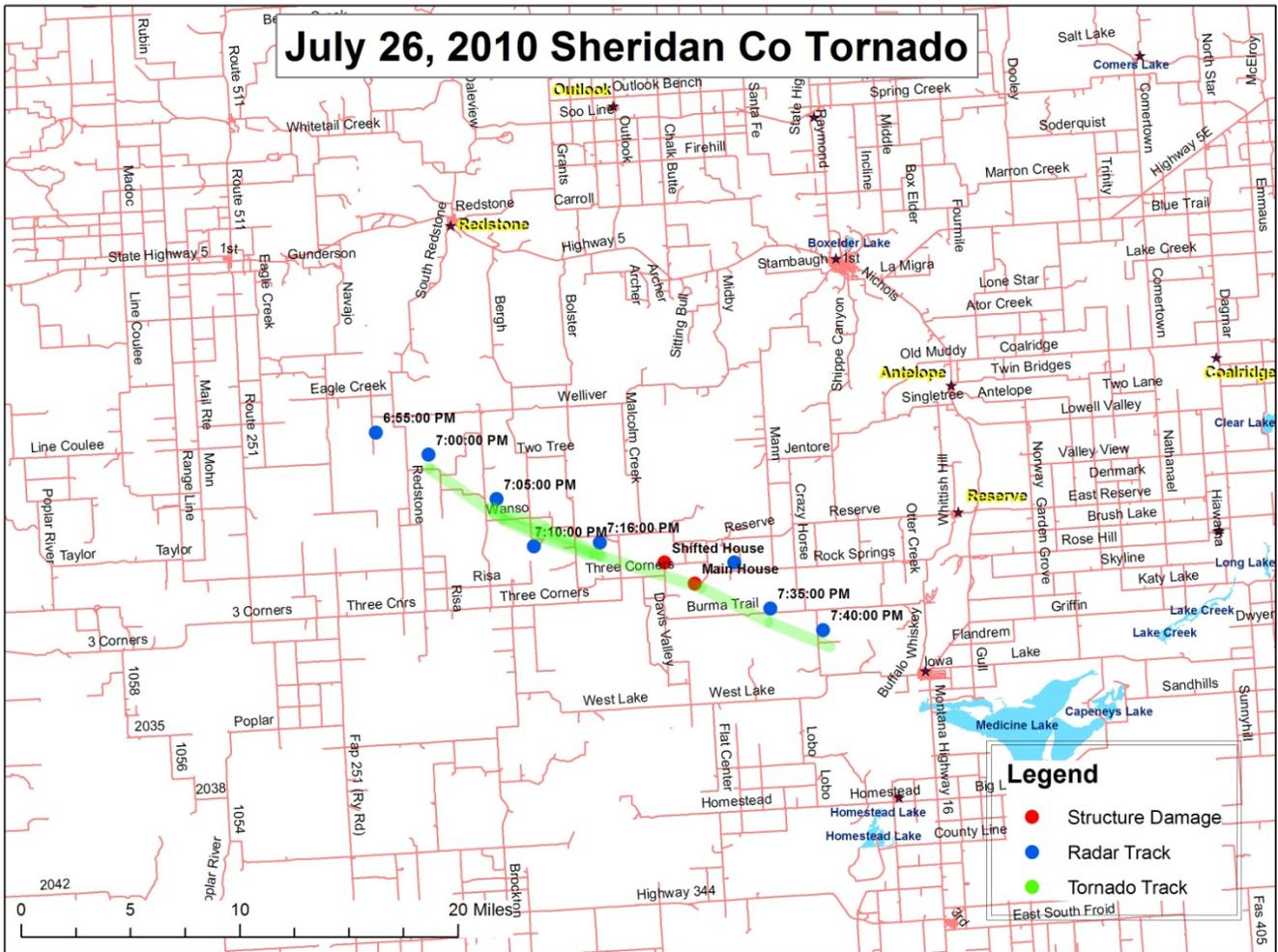
## Sheridan County Tornado Event July 26, 2010 National Weather Service Glasgow Storm Survey Summary



On the evening of July 26, 2010 thunderstorms developed in southern Saskatchewan along a cold front. The storms moved into northeastern Montana. The supercell thunderstorms developed strong rotation, and funnel clouds were reported in Daniels County. As the storms moved southeast, they intensified and a large, long-lived tornado formed. The tornado traveled for 18 miles, mostly through rural areas, but it had devastating impacts as it hit a ranch, killing two people and injuring one.



*Photo by Keenan Engelke, tornado is about 15 miles west of Reserve.*



*Time and location of the tornado path based on observations, damage and radar.*

On the morning of July 27<sup>th</sup>, two teams of NWS Glasgow staff surveyed the damage area. The first team started in Daniels County and followed the track of the storm to the east-southeast. The second team met with county and state officials at the site of the ranch that was most devastated. Both teams spoke to law enforcement officials, as well as weather spotters and the public who had reports of weather and/or damage as well as those who saw the tornado.

The initial damage from the tornado originated about 12 miles south of Redstone. Along the Reserve and Wanso Roads, six miles of power lines were snapped off. Sheridan Electric was able to restore power fairly quickly to the majority of residences by the next morning. Due to the poles being snapped, the tornado was rated an EF2 on the Enhanced Fujita Scale in this area. This was the widest portion of the tornado track with a width of a half mile.



*NWS Glasgow photo showing a power line snapped along Reserve and Wanso Roads (EF2 Damage)*

The tornado continued east-southeast where it encountered an abandoned farmhouse, a barn and a bridge that went across Wolf Creek on the Three Corners Road. The farmhouse was blown off of the foundation, had some of the siding stripped off, and roof damage. The barn was completely destroyed, with the west and north facing walls blown away, and the south and east facing walls intact for the most part, but flattened on the ground. Two grain bins were destroyed, with a third still on its foundation but crushed. They appeared to be empty. The damage at this location was rated an EF2 on the Enhanced Fujita Scale. The width of the tornado at this point was a quarter mile wide.



**Aerial Photo by Dallas Aero looking at a home that was blown off the foundation on Three Corners Rd. (EF2 Damage)**



**Aerial Photo by Dallas Aero looking north of a barn and grain bins on Three Corners Rd. (EF1 Damage)**



*Aerial Photo by Dallas Aero looking north at the Wolf Creek Bridge on Three Corners Rd. (EF2 Damage)*



*Sixty foot wide Wolf Creek Bridge on Three Corners Rd. NWS Glasgow Photo (EF2 Damage)*

The storm continued on its east-southeast track at a speed of about 30 mph. The Smith Ranch was then impacted. The ranch sits on a bit of a hill with a small stream valley from the west-northwest to just north of the property. There are no shelter belts or terrain to block some of the winds from the tornado. The next two photos show a before and after of the ranch using a similar aspect.

The tornado was rated an EF3 at the Smith Ranch, with a width of three tenths of a mile. This was the highest rating during the life cycle of the tornado.



*Google Earth image of the Smith Ranch.*



*Aerial Photo of Smith Ranch looking north by Dallas Aero. (EF3 Damage)*



***Aerial photo by Dallas Aero looking at the Smith Ranch from the north-northwest to the south-southeast.***

On the following page, there are several photographs. The first shows the main living area around the home. The upper middle of the photo shows a brown spot that held a single wide trailer, and the white in the photo shows the foundation of the two story house. The trailer frame was found to the right of the home foundation, but other remnants of the trailer were unidentifiable. The majority of the home debris was in the pile in the center of the photograph with the yellow vehicle in it. The lower right of the photo is where a corral was, along with several outbuildings.

A yellow pickup truck that was parked in front of the residences when the storm hit, was found a quarter mile southeast of the home, sitting in a field with lumber and other debris nearby. There were several vehicles and farm tractors and combines that were rolled, thrown and flipped over on the property.

Approximately 1.25 miles southeast of the Smith Ranch, a herd of cattle were spotted from the air, and reported to law enforcement. Approximately 2 dozen cattle were either found dead, or had injuries that required the veterinarian to euthanize them. Debris from the Smith Ranch was noted as far as two to three miles downstream of the ranch.

There were nine grain bins on the west end of the property. Three still had some of the metal sheeting around them, but the other six were entirely blown away, including a few that were full of grain.

There were at least 10 outbuildings and barns on the property, all of which were completely destroyed. A metal Quonset was still on its foundation, but had part of the top ripped off and it was crushed by all the debris in the area.



*Aerial photo by Dallas Aero looking from the north-northwest to the south-southeast.*



*NWS Glasgow Photo: Yellow pickup truck which originated at the Smith Residence found ¼ mile away (EF2 Damage)*



**NWS Glasgow Photo: Pickup truck thrown onto a tractor**



**NWS Glasgow Photo: Combine that appears to have been rolled several times**



***NWS Glasgow Photo: Injured Calf found north of the Smith Ranch being treated by Veterinarian***



***NWS Glasgow Photo: Foundation of grain bin that was cracked when the frame of the bin was blown away***

## National Weather Service Products Issued Prior to and During the Event:

### Storm Prediction Center: (Issued watches for a large area across the region).

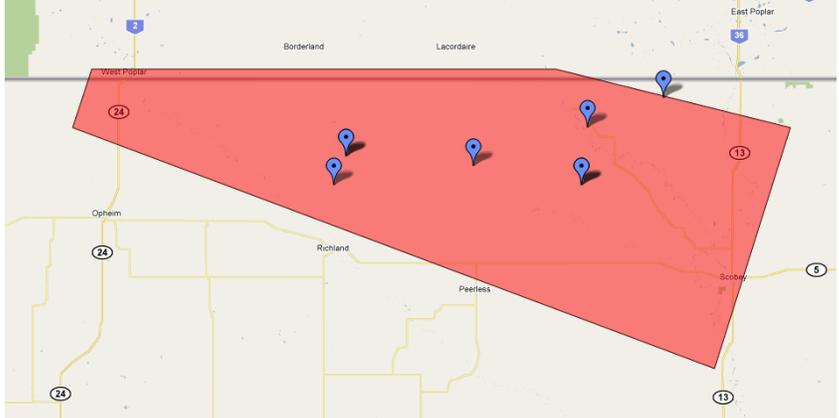
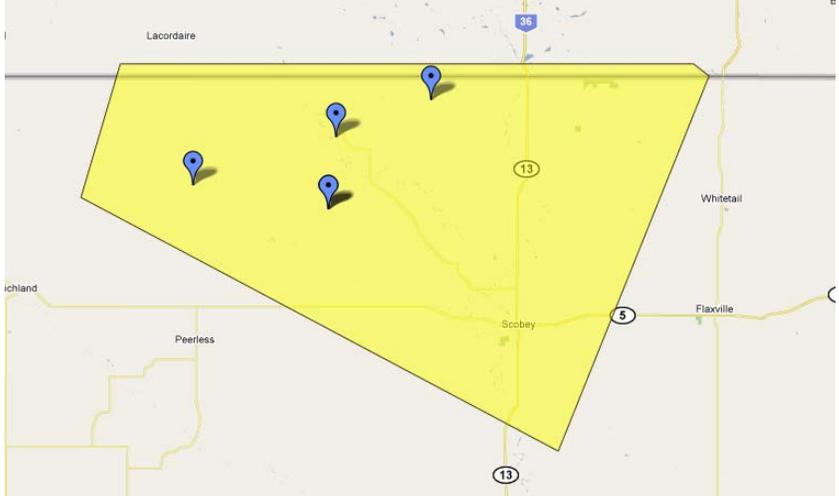
Severe Thunderstorm Watch 537 issued at 4:20 pm MDT for Eastern Montana including Sheridan County, as well as Western and North Central North Dakota and Northwest South Dakota. The watch included the statement “Severe thunderstorms can and occasionally do produce tornadoes”. This watch provided a lead time of 3 hours and 15 minutes to the deadly tornado event.

<http://www.spc.noaa.gov/products/watch/ww0537.html>

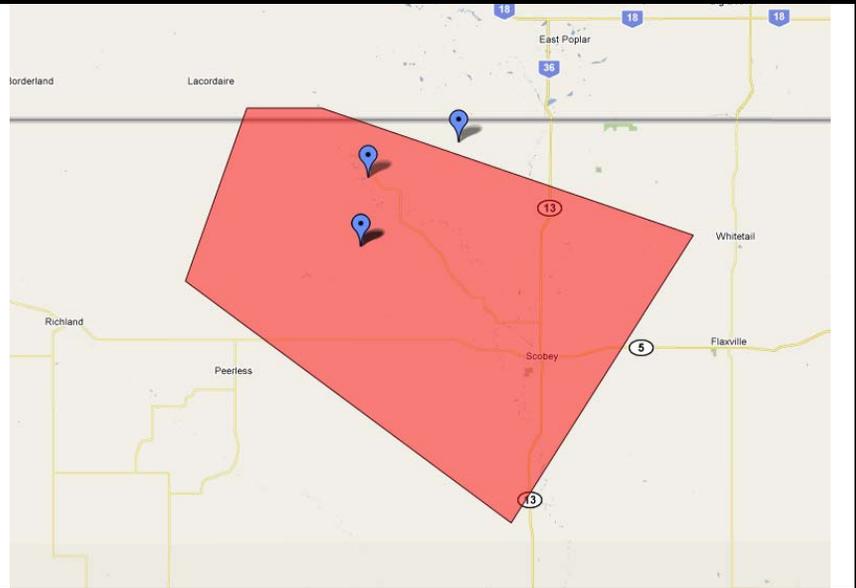
Tornado Watch 538 issued at 6:10 pm MDT for far Northeast Montana including Sheridan County, as well as Northern North Dakota. This watch replaced watch 537 over the affected area and provided a lead time of 1 hour and 25 minutes to the deadly tornado event.

<http://www.spc.noaa.gov/products/watch/ww0538.html>

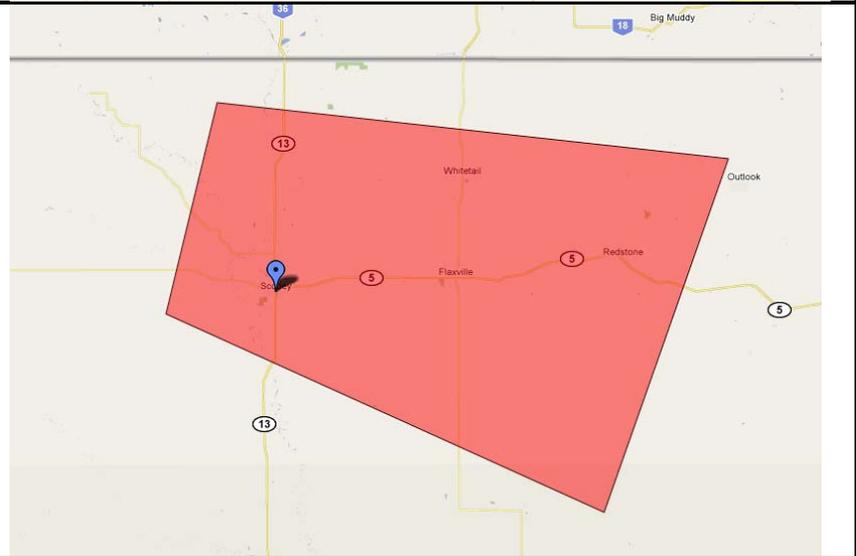
### NWS Glasgow (Issues the Severe Thunderstorm and Tornado Warnings for a small geographic area)

Warning Type/Issuance Time	Graphic Area of Warning
Tornado Warning from 530 pm to 630 pm MDT	
Severe Thunderstorm Warning from 530 pm to 630 pm MDT	

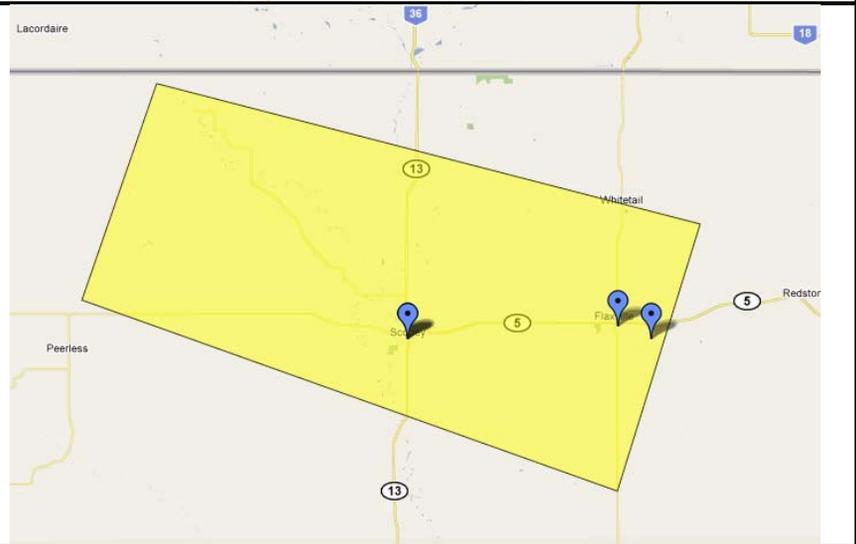
Tornado Warning from  
540 pm to 615 pm MDT



Tornado Warning from  
612 pm to 645 pm MDT



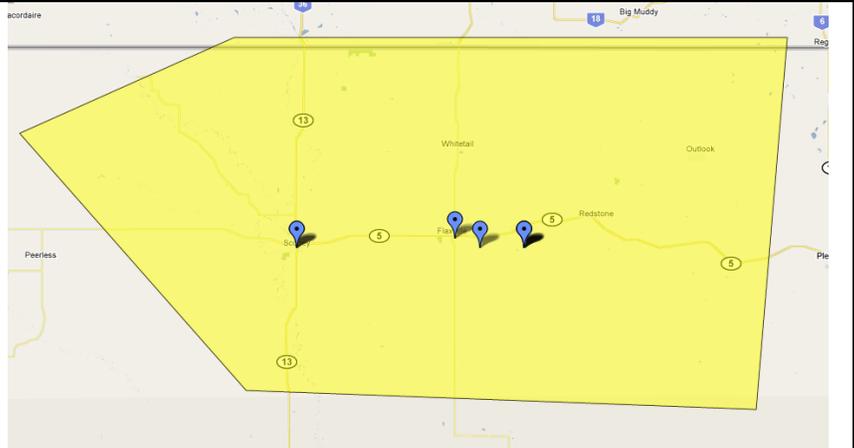
Severe Thunderstorm Warning from  
626 pm to 700 pm MDT



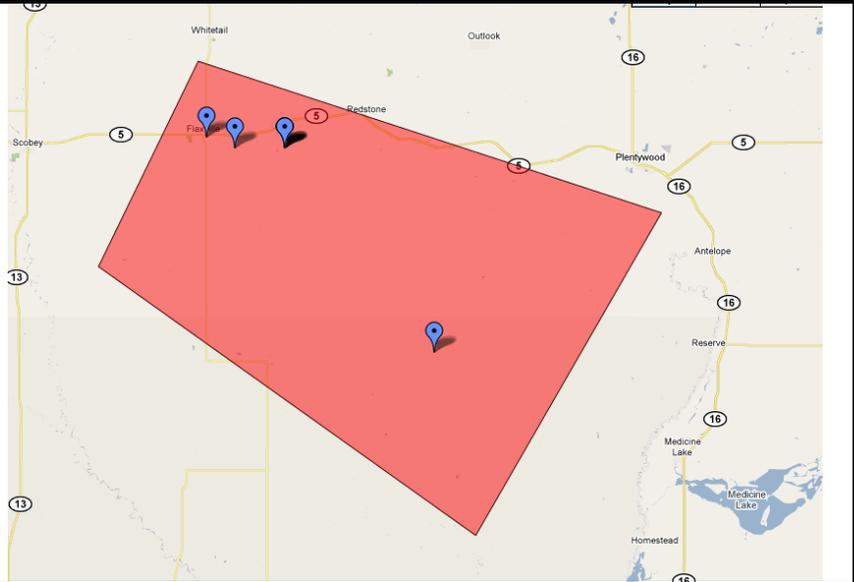
Severe Thunderstorm Warning from 626 pm to 658 pm MDT



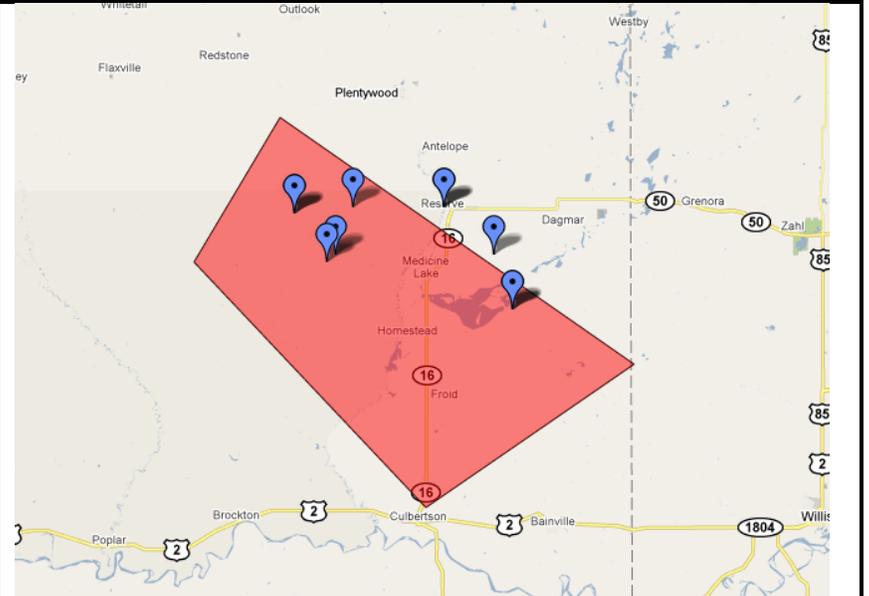
Severe Thunderstorm Warning from 627 pm to 730 pm MDT



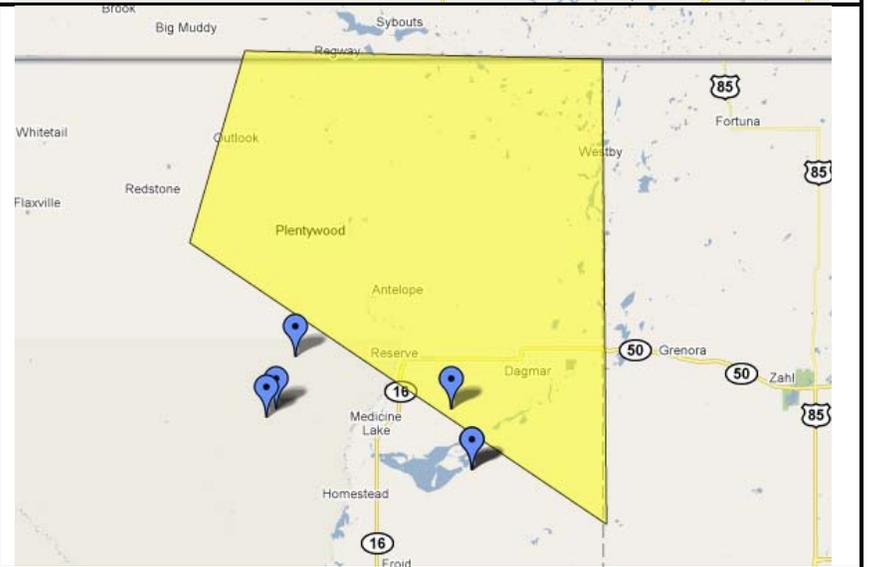
Tornado Warning from 644 pm to 715 pm MDT



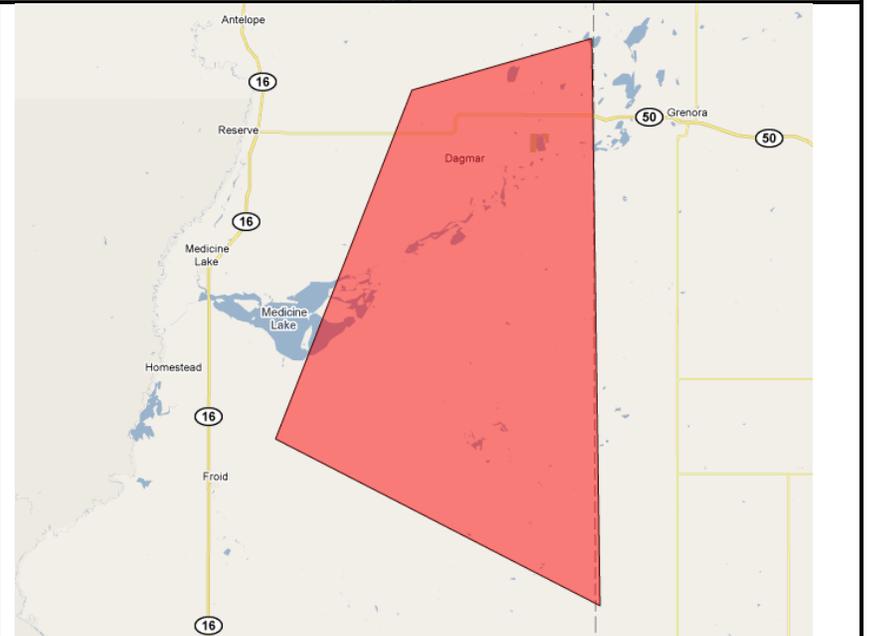
Tornado Warning from 716 pm to 815 pm MDT

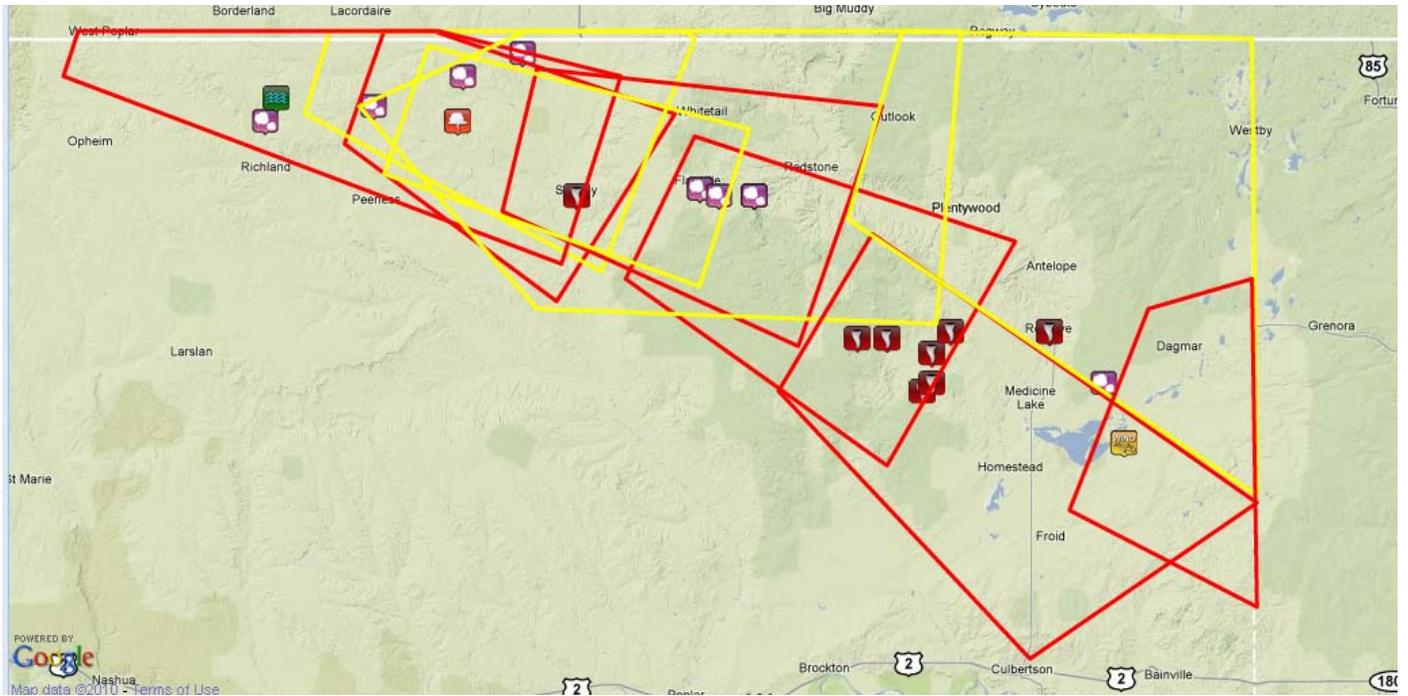


Severe Thunderstorm Warning from 722 pm to 815 pm MDT



Tornado Warning from 812 pm to 831 pm MDT





**Graphic depicting all the Severe Thunderstorm (yellow) and Tornado Warnings (Red) issued by NWS Glasgow for the Tornado Event on the evening of July 26, 2010. Local Storm Reports are indicated by hail, wind and tornado icons.**

NOUS45 KGGW 282052  
 PNSGGW  
 MTZ016>027-059>062-290900-

PUBLIC INFORMATION STATEMENT  
 NATIONAL WEATHER SERVICE GLASGOW MT  
 252 PM MDT WED JUL 28 2010

...PUBLIC INFORMATION STATEMENT...  
 ...DAMAGE SURVEY COMPLETED FOR SIGNIFICANT TORNADO IN SHERIDAN COUNTY...

THE NATIONAL WEATHER SERVICE OFFICE IN GLASGOW HAS COMPLETED A SURVEY OF THE DAMAGE PATH OF A SIGNIFICANT TORNADO THAT STRUCK SHERIDAN COUNTY ON THE EVENING OF JULY 26. THE TORNADO INITIALLY TOUCHED DOWN NEAR THE INTERSECTION OF WOLF ROAD AND SOUTH REDSTONE ROAD 12 MILES SOUTH OF REDSTONE AT ABOUT 7:00 PM. THE TORNADO TRACKED EAST SOUTH EAST AT ABOUT 30 MPH AND LIFTED AT ABOUT 7:35 PM 7.5 MILES WEST NORTH WEST OF MEDICINE LAKE...WITH A TOTAL PATH LENGTH OF 18 MILES. THE MAXIMUM WIDTH OF THE DAMAGE PATH WAS ABOUT .50 MILES...AND THE ESTIMATED WIDTH NEAR THE SMITH FARM RESIDENCE...WHERE 2 FATALITIES AND 1 INJURY WERE REPORTED...WAS .30 MILES.

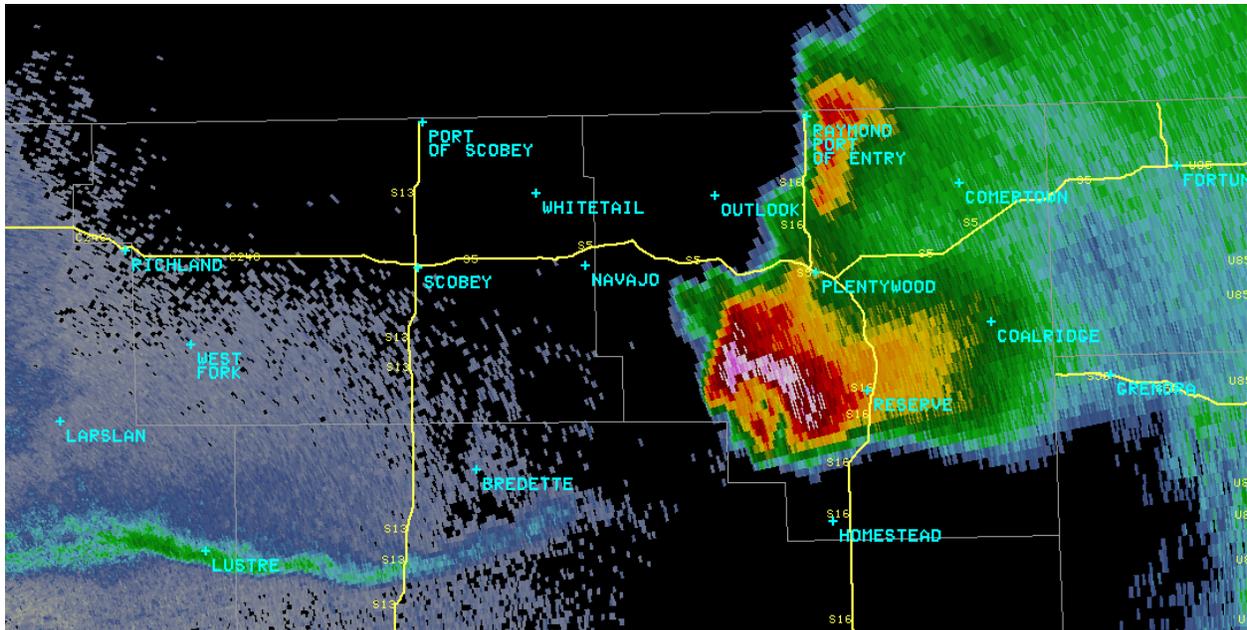
IN ADDITION TO THE DESTRUCTION OF THE SMITH FARM...A SMALL BRIDGE WAS DESTROYED ON 3 CORNERS ROAD...A VACANT HOUSE WAS REMOVED FROM ITS FOUNDATION 3 MILES NORTHWEST OF THE SMITH FARM...AND ABOUT 6 MILES OF POWER POLES WERE BROKEN ALONG RESERVE AND WANSO ROADS.

THE TORNADO WAS RATED EF-3 ON THE ENHANCED FUJITA SCALE WITH ESTIMATED WIND SPEEDS AROUND 150 MPH.

THIS WAS ONE OF THE STRONGEST TORNADOES IN MONTANA HISTORY. PREVIOUS TORNADOES RATED F-3 IN INTENSITY ON THE FUJITA SCALE INCLUDE:

JUNE 7 1946	ROOSEVELT COUNTY	ONE FATALITY/ONE INJURY
JUNE 19 1952	WIBAUX COUNTY	ONE FATALITY/TWO INJURIES
JULY 5 1988	CHOTEAU	TWO INJURIES

THIS WAS ALSO THE DEADLIEST TORNADO IN MONTANA HISTORY WITH THE 2 FATALITIES EQUAL TO THE TWO FATALITIES IN A TORNADO LAST RECORDED ON JUNE 10 1923 IN MINERAL COUNTY FROM A TORNADO RATED F1.



**Tornadic thunderstorm and cold frontal boundary moving through Lustre at 731 pm, around the time the Smith Ranch was being impacted.**

PRELIMINARY LOCAL STORM REPORT...SUMMARY  
 NATIONAL WEATHER SERVICE GLASGOW MT  
 242 PM MDT WED JUL 28 2010

..TIME...	...EVENT...	...CITY LOCATION...	...LAT.LON...
..DATE...	...MAG....	..COUNTY LOCATION..ST..	...SOURCE....
..REMARKS..			
0530 PM	HAIL	9 N PEERLESS	48.91N 105.83W
07/26/2010	M1.00 INCH	DANIELS MT	PUBLIC
ROTATION AND WALL CLOUD NOTED			
0550 PM	HAIL	5 N RICHLAND	48.89N 106.05W
07/26/2010	M1.75 INCH	DANIELS MT	PUBLIC
DESTROYED CROPS			
0600 PM	HAIL	15 NW SCOBEE	48.95N 105.65W
07/26/2010	M4.00 INCH	DANIELS MT	PUBLIC
HAIL RANGED FROM 3 TO 4 INCHES IN DIAMETER			
0600 PM	HAIL	19 NE PEERLESS	48.98N 105.53W
07/26/2010	M1.75 INCH	DANIELS MT	PUBLIC
SMALLER HAIL MIXED IN WITH THE GOLF BALL SIZED HAIL			
0600 PM	FUNNEL CLOUD	13 NW PEERLESS	48.92N 106.03W
07/26/2010		DANIELS MT	PUBLIC
ALONG WITH A WALL CLOUD			
0605 PM	FUNNEL CLOUD	6 NNW FOUR BUTTES	48.89N 105.66W
07/26/2010		DANIELS MT	PUBLIC
0635 PM	TORNADO	SCOBEE	48.79N 105.42W
07/26/2010		DANIELS MT	TRAINED SPOTTER

OBSERVED TORNADO TOUCH DOWN 2 TO 3 TIMES FEW MILES NORTH OF SCOBEY.

0647 PM HAIL NAVAJO 48.79N 105.06W  
07/26/2010 E1.00 INCH DANIELS MT TRAINED SPOTTER

QUARTER SIZE AND SMALLER HAIL.

0650 PM HAIL 2 ESE FLAXVILLE 48.79N 105.13W  
07/26/2010 M3.00 INCH DANIELS MT PUBLIC

FUNNEL CLOUD AND WALL CLOUD ALSO OBSERVED

0650 PM HAIL FLAXVILLE 48.80N 105.17W  
07/26/2010 M2.00 INCH DANIELS MT TRAINED SPOTTER

GOLF BALL TO HEN EGG SIZED HAIL

0655 PM HAIL NAVAJO 48.79N 105.06W  
07/26/2010 M3.00 INCH DANIELS MT TRAINED SPOTTER

GOLFBALL SIZE HAIL COVERED THE GROUND AT 650 PM. THREE INCH HAIL OCCURRED AT 655 PM. TOTAL RAINFALL OF 0.88.

0715 PM TORNADO 18 W RESERVE 48.60N 104.85W  
07/26/2010 F2 SHERIDAN MT NWS STORM SURVEY

6 MILES OF POWER LINES WERE DOWN WITH THE MAJORITY OF THE WOODEN POLES SNAPPED.

0720 PM TORNADO 15 W RESERVE 48.60N 104.79W  
07/26/2010 SHERIDAN MT PUBLIC

SHERIDAN COUNTY DISPATCH CALLED WITH A REPORT OF A TORNADO ON THE GROUND WEST OF RESERVE. THIS REPORT WAS RELAYED THROUGH SHERIDAN DISPATCH.

0721 PM TORNADO 15 W RESERVE 48.60N 104.79W  
07/26/2010 SHERIDAN MT PUBLIC

PUBLIC REPORT OF TORNADO ON THE GROUND TO THE WEST OF RESERVE.

0725 PM TORNADO 13 WSW RESERVE 48.53N 104.72W  
07/26/2010 F2 SHERIDAN MT NWS STORM SURVEY

60 FOOT WIDE WOODEN BRIDGE WAS DESTROYED AS TORNADO MOVED THROUGH. ALSO AN ABANDONED TWO STORY HOUSE WAS SHOVED OFF OF ITS FOUNDATION AND A BARN WAS DESTROYED.

0730 PM TORNADO 12 WSW RESERVE 48.54N 104.70W  
07/26/2010 F3 SHERIDAN MT NWS STORM SURVEY

\*\*\* 2 FATAL, 1 INJ \*\*\* TWO FATALITIES AND ONE INJURY. A NATIONAL WEATHER SERVICE STORM SURVEY WAS CONDUCTED AND A COMPLETE REPORT WILL BE AVAILABLE SHORTLY.

0800 PM HAIL 7 SE RESERVE 48.54N 104.35W  
07/26/2010 E0.75 INCH SHERIDAN MT TRAINED SPOTTER

ACCOMPANIED BY HEAVY RAIN.

0800 PM TSTM WND GST 9 ESE MEDICINE LAKE 48.46N 104.31W  
07/26/2010 E70.00 MPH SHERIDAN MT TRAINED SPOTTER

ONE INCH HAIL ALSO FELL. NO DAMAGE REPORTED SO FAR.

**Press Release issued Tuesday afternoon by Sheridan County:**

*At approximately 7:15 PM (MDT) Monday, July 26, 2010 an EF3 tornado struck the Smith Ranch at 1313 Rock Springs Road, about 11 miles northwest of Medicine Lake, Montana.*

*The ranch buildings were demolished by the storm, with three members of the Smith family in the main home when the tornado hit. A community-wide response of area fire and EMS agencies, county authorities including the Sheriffs Department, Disaster and Emergency Services, US Border Patrol, and a large number of family members and neighbors mounted a hazardous and complex search operation during the night. Sheridan County Sheriff Pat Ulrickson stated that, "I've never seen anything like this before. The destruction is just indescribable. Our thoughts and prayers are with the Smith family today."*

*Barbara Smith, 71 was transported from the basement of her demolished home to Sheridan Memorial Hospital in Plentywood by ambulance, and later evacuated to Billings. Her grandson, Robert ("Robby") Richardson, 10 and her nephew, Steven D. Smith, 46, were found dead at the scene. Robby was also in the basement of the home; Steve was found about 200 feet away. Coroner David Fulkerson attributed their deaths to blunt force head and chest injuries; they died very quickly.*

*No other injuries attributable to the storm have been reported, although a few minor injuries were sustained by responders.*

*On Tuesday, July 27, 2010 officials from Sheridan County, Montana Disaster and Emergency Services and the National Weather Service in Glasgow conducted a damage assessment. In addition to the significant property damage, including a two story house that was completely destroyed, a single wide trailer blown away, numerous outbuildings and ranch vehicles destroyed, there were also livestock and crop losses reported. Approximately 20 cows were killed or seriously injured. Another farm house, that was not lived in, was pushed off its foundation and the barn flattened. Sheridan Electric Cooperative was repairing damage to approximately 6 miles of down power poles and lines. They had restored power to all but a handful of customers by early morning.*

*The strong tornadic winds were estimated at the Smith Ranch to be approximately 150 miles per hour and it was rated an EF3 on the Enhanced Fujita Scale by National Weather Service meteorologists. The tornado also ripped the deck off a county bridge over Wolf Creek on Three Corner Road. The road is temporarily closed while the Sheridan County Road Department constructs a bypass.*

*Tanja Fransen, warning coordination meteorologist for the National Weather Service stated that yesterday's tornado was one of the strongest and most deadly in Montana history. Only three previous F3 tornadoes have been officially recorded:*

<b>DATE</b>	<b>LOCATION</b>	<b>FATALITIES/INJURIES</b>
<i>June 7, 1946</i>	<i>Roosevelt County</i>	<i>one fatality/one injured</i>
<i>June 19, 1952</i>	<i>Wibaux County</i>	<i>one fatality/two injured</i>
<i>July 5, 1988</i>	<i>Choteau County</i>	<i>two injured</i>

*This tornado is the deadliest in Montana since the June 10, 1923 F1 tornado in Mineral County which resulted in two fatalities.*

*Fransen commented that, "this is a significant tornado for Montana. The length of the tornado path, as well as the maximum width of the tornado is still being calculated but it originated in Daniels County and observers noted that it went up and came down several times as it traveled southeast from Daniels through Sheridan Counties.*

*Family, friends and neighbors were on scene this morning, assessing the damage and working on finding items that can be saved, and determining how to best clean up the debris.*

*For information regarding Sheridan County and this disaster, contact: Sheridan County Commissioners, 406-765-1660*

*For information regarding the Tornado or the Damage rating, contact: Tanja Fransen, 406-228-2850 or 406-230-1151.*

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NWS Glasgow would like to thank all the people who have sent us photos and video (and continue to do so), and appreciates the assistance of Dallas Aero from the Poplar, MT Airport and the Department of Homeland Security at the Port of Raymond for the aerial photography they did.