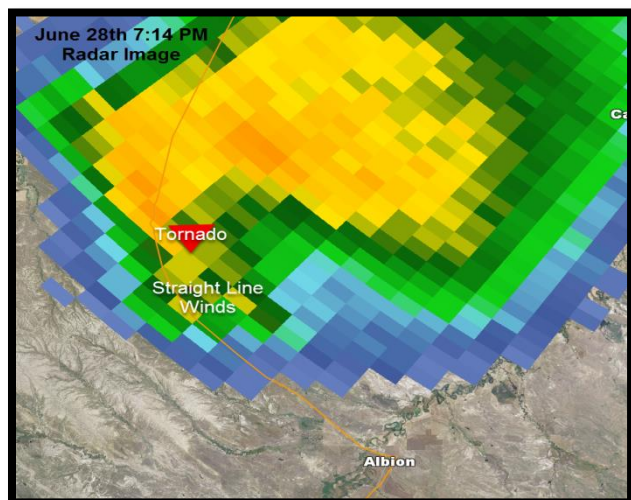


Tornadoes - June 28th 2018

Damage Survey Results from Carter County, MT and Harding County, SD

During the evening hours on June 28th, a severe thunderstorm moved across Carter County producing golf ball or larger hail, straight line winds 70-80 mph, and four tornadoes as it moved toward the South Dakota border.

Around 7:17 PM the first tornado was spotted crossing SR 323 in Carter County about 12 miles north of Albion in the Finger Butte Area. This tornado was spotted by a rancher about a mile to the south. His property sustained straight line wind damage on the south side of the storm, including: trees uprooted, a barn roof blown off, a shed destroyed, and a horse trailer flipped over. This damage was consistent with winds 70-80 mph.

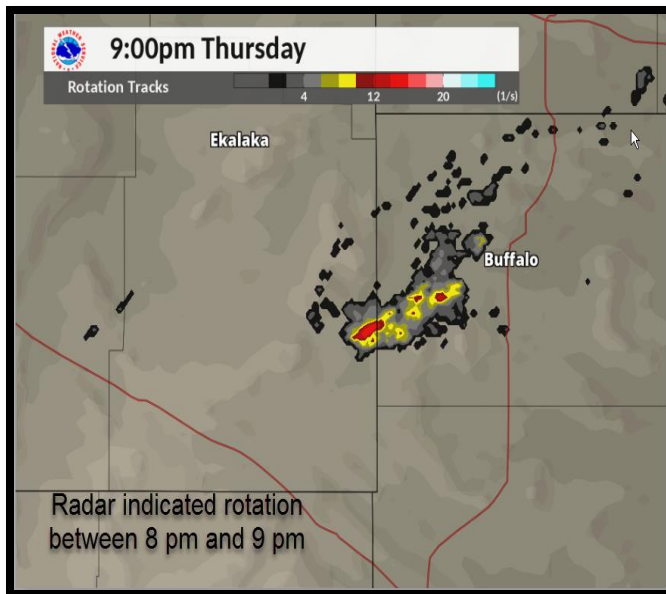


This tornado left no trace along SR 323 and moved through open terrain before lifting. This tornado has been assigned a rating of EF-0 since no damage markers could be observed.

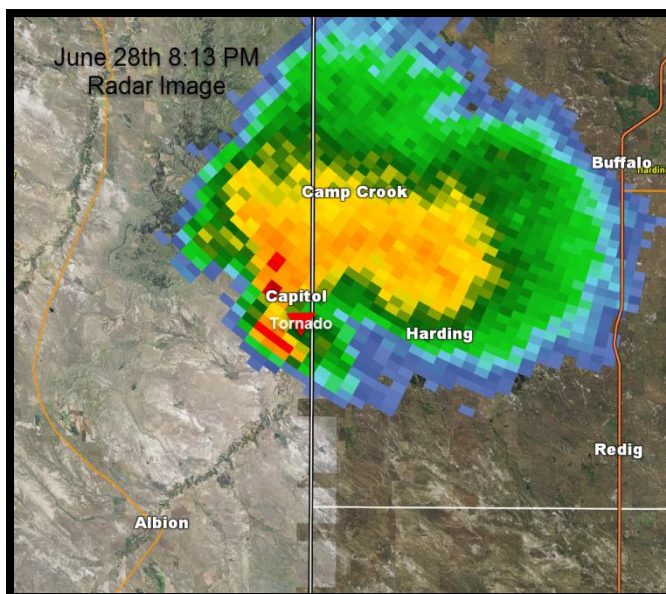
Storm chasers following this storm as it pushed east through rural areas of Carter County noticed two additional brief tornado touchdowns. These tornadoes were in extremely rural and open areas with no road access to do damage surveys.

At approximately 8:06 PM another tornado touched down just east of Camp Crook Rd. 4 miles south of Capitol, MT. In its initial phases this tornado skipped along the ground, as confirmed by chaser video, producing sporadic snapped trees and downed limbs consistent with winds 80-90 mph (EF-0 to EF-1).

Damage survey and eye witness accounts confirm the tornado initially moved north-north-east along the Little Missouri River. As it approached the river it intensified to 120 mph (EF-2) producing an increasingly wider swath of snapped trees several hundred yards wide. The tornado started to turn more to the east at this time, moving on a northeasterly track as it crossed the Little Missouri and moved across the Montana/South Dakota border.



In South Dakota, this storm increased to an estimated $\frac{1}{2}$ mile wide and damage observed was consistent with an EF-3 tornado rating, with winds estimated at 136 mph. Preliminary damage in South Dakota included one home destroyed, shed destroyed, trailer toppled over, heavy hay bales moved, along with tree damage (even debarked in some cases). Local residents reported finding numerous dead deer in the debris along the river where the tornado crossed the tree line. Damage in South Dakota is assessed by the National Weather Service in Rapid City and further updates to this information can be found at weather.gov/rapidcity.





Summary of Carter County Tornadoes

June 28, 2018

The following information is based on visible storm chasers accounts (Tom Warner, Cody Lere, Roger Hill) and NWS storm survey results.

Tornado 1 (EF-0):

Start: 45.3219, -104.4806 (717pm)
End: 45.3548, -104.2803 (735pm)

Tornado on the ground for 10 miles. No damage visible from tornado. EF-0 microburst damage to the south of the tornado due to RFD included; 2 trees uprooted, barn roof blown off, shed destroyed, and a horse trailer flipped over.

Tornado 2 (EF-0):

Start: 45.3503, -104.2066 (744pm)
End 45.3573, -104.1321 (750pm)

Tornado on the ground for 4 miles (6 minutes). Rural areas. No reports of damage.

Tornado 3 (EF-0):

Start/End: 45.3675, -104.0981 (801pm)

Brief touchdown. No reports of damage. Reports indicate anti-cyclonic rotation.

Tornado 4 (EF-2 in MT, EF3 in SD):

Start: 45.3753, -104.0813 (806pm)

Exit to SD: 45.4092, -104.0406 (820pm)

End: 45.4475, -103.9904 (830pm)

Tornado on the ground for 7 miles (24 minutes) from south of Capitol, MT northeast into SD.


In MT: 3 mile long path, 200 yards wide. Damage ranged from EF-1 at the initial touchdown, increasing to EF-2 just before the SD border. Large tree limbs down and trees being snapped off, becoming more widespread as the path approached the Little Missouri River.

Max Estimated Wind Speed: 136 mph (EF-3)

Width: Ranged from 200 yards in MT to near ½ mile in SD

Length: Approximately 7 miles extending across MT and SD

Time on the ground: Approximately 24 minutes

EF Rating	Wind Speeds	Expected Damage	
EF-0	65-85 mph	'Minor' damage: shingles blown off or parts of a roof peeled off, damage to gutters/siding, branches broken off trees, shallow rooted trees toppled.	
EF-1	86-110 mph	'Moderate' damage: more significant roof damage, windows broken, exterior doors damaged or lost, mobile homes overturned or badly damaged.	
EF-2	111-135 mph	'Considerable' damage: roofs torn off well constructed homes, homes shifted off their foundation, mobile homes completely destroyed, large trees snapped or uprooted, cars can be tossed.	
EF-3	136-165 mph	'Severe' damage: entire stories of well constructed homes destroyed, significant damage done to large buildings, homes with weak foundations can be blown away, trees begin to lose their bark.	
EF-4	166-200 mph	'Extreme' damage: Well constructed homes are leveled, cars are thrown significant distances, top story exterior walls of masonry buildings would likely collapse.	
EF-5	> 200 mph	'Massive/incredible' damage: Well constructed homes are swept away, steel-reinforced concrete structures are critically damaged, high-rise buildings sustain severe structural damage, trees are usually completely debarked, stripped of branches and snapped.	

Photos and Video Courtesy of Daniel Kalbach

[Daniel Kalbach Tornado Video](#)







**Photos Courtesy
NWS Rapid City
South of Camp Crook, SD**

