

# Researchers identify 15 twisters that hit prairies on Canada Day

July 9 2019, by Debora Van Brenk

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Researchers from the Northern Tornadoes Project, based at Western University, investigated an outbreak of tornadoes in northern Saskatchewan and Alberta during the Canada Day Weekend, 2019. The damage is evident in these on-the-ground photos and drone images. Credit: University of Western Ontario

Two campgrounds in ruins. Houses lifted and shifted on their foundations. Thousands of trees felled as if by a giant meteorological axe.

All told, as many as 15 [tornadoes](#) swept through northern Saskatchewan and Alberta during the Canada Day weekend, new findings from Western's Northern Tornadoes Project (NTP) suggest.

NTP researchers have just returned from the project's first official road trip, a little more than two weeks after Western announced the project's expanded scope to track and analyze every twister in the country.

They hopped flights after hearing reports a tornado had hit Cold Lake, Alberta, on June 28 and a campground about 360 kilometres northwest of Saskatoon the following day. There were unconfirmed sightings and damage reports of other twisters nearby.

Emilio Hong and Aaron Jaffe, research engineers with the project, hit the ground running within 24 hours and were amazed by what they saw at Meadow Lake Provincial Park.

"There were just [trees](#) down everywhere. It looked like the area was obliterated. Crushed trailers and campers everywhere," Hong said.

A tree had split one camper down the middle, with five people inside. Another camper with two people in it had rolled on its side. No one was seriously injured.



Researchers from the Northern Tornadoes Project, based at Western University, investigated an outbreak of tornadoes in northern Saskatchewan and Alberta during the Canada Day Weekend, 2019. The damage is evident in these on-the-ground photos and drone images. Credit: University of Western Ontario

Further exploration in a community called Goodsoil and in a nearby hamlet showed additional damage. Then they got a tip high winds had hit a cattle ranch. Expecting to find a few toppled trees, they arrived to an almost unbelievable scene.

"Thousands and thousands of trees down. There are areas where there are no trees standing," said Jaffe.

The outbreak and subsequent research "exemplifies what we are trying

to do with NTP," executive director David Sills said. Without the project's resources, including collaboration with Environment and Climate Change Canada, several of these sites might never have been explored at all.

"It's looking like there is the potential for up to 15 tornadoes for this multi-day event—and again only a thorough investigation will be able to ensure we track down each one," Sills said.

The team's three days of research, and research yet to come, includes working with Environment and Climate Change Canada meteorologists and gathering extensive data from photos, video, ground surveys, interviews, drone flyovers, social media reports and satellite imagery.

Then there will be a detailed analysis of all the data, including identifying the severity of each twister on the Enhanced Fujita (EF) scale.





Credit: University of Western Ontario

"If not for the Northern Tornadoes Project, who knows how many of those would have gone unnoticed, or been recorded by default as EF-zero, because no one could get out to investigate," Jaffe said.

"It's rewarding to know you're making a difference. It's rewarding to see up close what you're working on, as opposed to sitting at a desk and viewing pictures of tornado damage," he added.

The \$10-million Northern Tornadoes Project announced a major expansion at Western in late June with the goal of detecting and analyzing every tornado in Canada.

The expansion was made possible through a partnership with ImpactWX, a Toronto-based social impact fund, which supported the NTP with a \$6.4-million investment.

Combined with previous giving, and \$2.5 million from Western to endow the ImpactWX Chair in Severe Storms Engineering, the combined total investment in tornado research at Western is more than \$10 million.

With additional support from a public database based at Western Libraries, the project looks to improve the science of predicting and assessing storms, and ultimately to reduce the toll they take on people and property.

Provided by University of Western Ontario

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