
**Confirmed Tornado
Arnstein, Ontario
August 20, 2009**

Date- Local: Thursday, August 20th, 2009

UTC: Thursday, August 20th, 2009

Time- Local: 1730

UTC: 2130

Location: Arnstein

Region: North Bay - West Nipissing

Classification: Confirmed Tornado

Category: C

Casualties: None

Track Length: 1344 m

Width: None available

Motion: 246 degrees

Damage Estimate: None available

F-Scale Rating: F1

Code: TS

Damage Survey: Yes done by Gai Gilbert

Spotter Reports: None

Other Documents:

Damage report detailing damage area, tornado strength and damage pattern

Damage report for Seagull Lake Road residence.

Pictures of damage both at aerial and ground

Storm damage survey report filled in by Brad Rousseau

Tornado F-Scale Assessment

Brad L. Rousseau

Tornado Data Production Assistant, Environment Canada

February 12th, 2010

Classification: Confirmed Tornado

Date: Thursday, August 20th, 2009

Location: Arnstein, North Bay - West Nipissing Region

Assessment: F1

F-Code: TS

Explanation of Assessment: Large trees downed and snapped, and section of forest completely destroyed. A shed was also pushed off its support blocks, and wooden dog houses thrown into woods behind house.

SJS

OSPC Storm Damage Survey Report

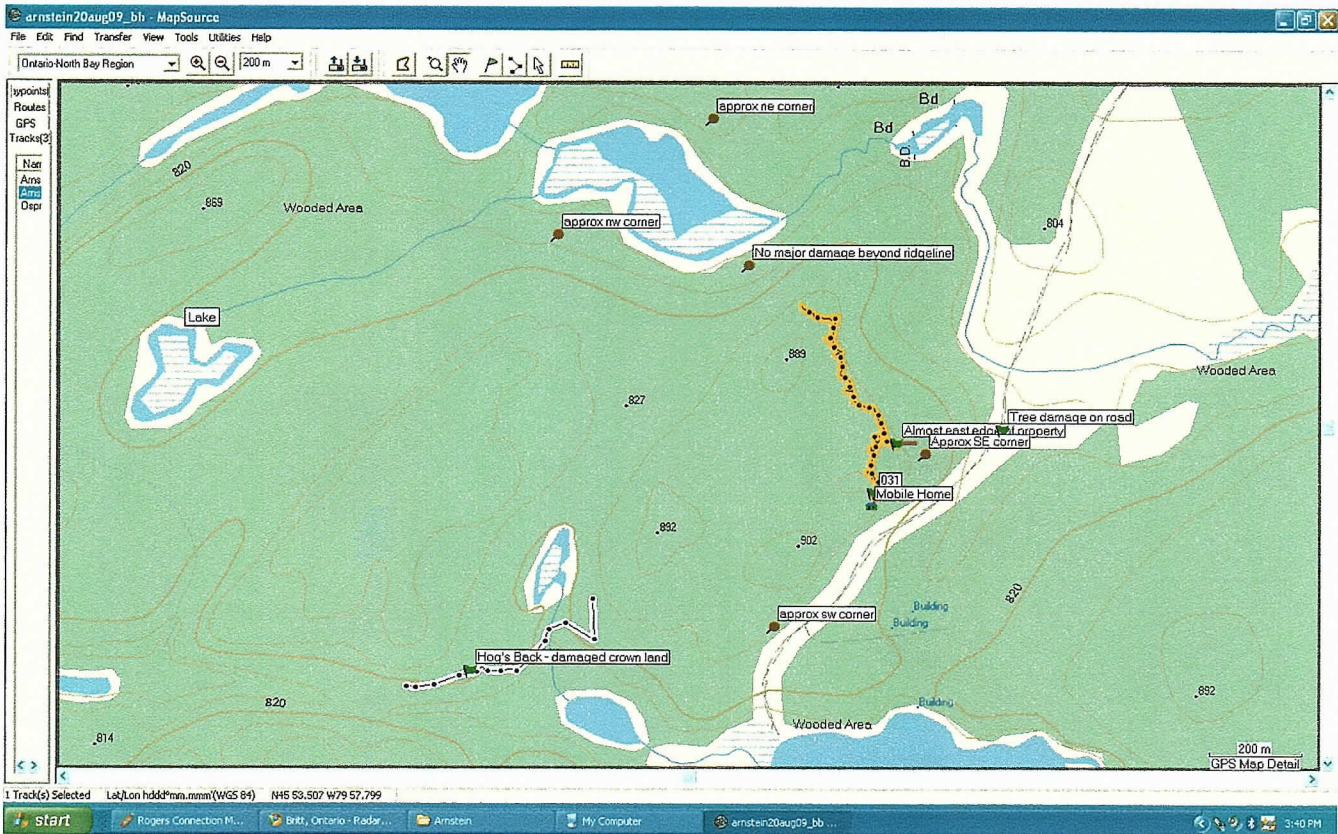
Investigators	#1 (Lead) #3	#2 #4
Location / Region	Arnstein	North Bay - West Nipissing
Event Date Local / UTC (YYMMDD)	2009-08-20	2009-08-20
Event Time Local / UTC	1730	2130
Severe Weather Event Type	tornado	
Classification	C	
F-scale Value	f1	
F-scale Code	TS	
Start Lat / Long	45.885061	-79.955382
End Lat / Long	45.889943	-79.939481
Path Length (m)	1344	
Motion (degrees)	246	
Max. Path Width (m)	width	
Avg. Path Width (m)	width	
Human Injuries / Fatalities	0	0
Animal Injuries / Fatalities	0	0
Damage (\$K) / Source	0	
Damage Description	Large trees downed, and section of forrest completely destroyed.	
Other Notes	Credible witness saw tornado where forrest was destroyed	
Images and Captions	include storm photos, damage photos, maps, etc. below	







Arnstein 20 Aug 2009



Updated info

1. A quick check with GPS shows that less than the full 100 acres was affected – perhaps 60-70 acres.
2. Damage zone behind the house is about 1/2Km square.
3. More than 90% of the large trees in affected area are down.
4. Took EC crew over 11/2 hrs. to penetrate 1/2Km or so into the zone along the east side (yellow dotted line).
5. We did not attempt the west side as it was considered to be almost impassable.
6. Hog's Back was surveyed via a 4 wheeler on a local trail and the damage visible from the trail although significant was not as bad as the Rogerson's property.
7. The aerial photos were not too helpful for getting a sense of size due in part to the low altitude flown but, damage is certainly visible in some (05,06 &09). The downed trees are as green as the ones still standing so it is almost impossible to estimate percentages from the aerial shots. We were hoping for more digital aerial shots but, we haven't received any as yet.
8. We took many pictures of trees in various states from pushed down to snapped and torn off. So much greenery makes it very difficult to call type and size of the event. We do not have ripped off roofs or smashed vehicles or numerous roads to access the area to help us decide we have hundreds of cords of firewood and one eye witness (two if one includes the dog that was dragged along by the dog house it was tied to). That dog is now afraid to go into the woods behind its home even with its owner. Trees of all types on the ground so, perhaps hardwood

trees don't grow significant tap roots up here. I do know that some very large Hemlocks were knocked down and the owners are quite saddened by the loss of their forest.

9. We were told that after the storm the south end of the lake looked like a green carpet with all the leaves in the water.
10. Our eye witness wasn't sure if the funnel cloud actually touched the lake or just stayed on land but, did restate that it dissipated or disappeared off towards the east. He did say that it looked like it was moving towards him at one point (he was north of the event).
11. Given that the damaged area is much wider than the max 50 meters suggested for a F0, I think we are in the F1 category if it was a Tornado.
12. There are some observations that suggest some straight line event:
 1. The large trees were down generally towards the north and there was only small localized convergence patterns;
 2. The event was not on the ground for long.
 3. There didn't seem to be an opposite side to the damage which showed circulation.
13. I believe that it is likely that the Mobile home was actually skipped over and spared destruction similar to those homes up in the Matheson area a few years back.

Conclusion:

My first impression on the first visit was that a straight line wind event had occurred. I was amazed that the Mobile Home had survived relatively untouched while the forest a hundred feet behind it was virtually destroyed. A credible eye witness saw what he said was a tornado which we noted to be exactly where the forest was destroyed. If we had a before picture down the lake (similar to our after picture) it would be interesting to see if the hill top was more convex in shape. This is not an easy one to call.

Weather Event at 870 Seagull Lake Road, Arnstein, Ontario
Thursday, 20 Aug 2009
Time: 1730 – 1800L

Lat/Long: N45 53' 18.9" / W079 56' 37.7"

Event reported by property owner Rachel Rogerson (705-757-1994)

- Owner not home at time of the event
- Neighbour to the south gave estimate of time of storm (they did not see a tornado or funnel cloud but did mention lots of wind and poor visibility with heavy rain)
- Owners Father-in-law Mr. Loyal Rogerson gave me a tour of the area

Location Description - forested 100 acre property with dwelling located on higher ground approx 100M off Seagull Lake Road

- mix of Oak, Maple, Hemlock, White pine and Spruce etc. (many large mature trees)
- Dwelling is a Mobile Home with a shingled wooden roof added on. There was a wooden garden shed, ice shack, dog house and children's swing set etc.

Visible Storm Damage

- Roof Soffits on east side of dwelling pushed up
- No visible damage to the west side of the home
- Owner reported that some debris had penetrated a window
- Owner also reported that the toilet was devoid of water
- Storage shed pushed off support blocks
- Some smaller structures like dog cage and wooden dog houses thrown into the woods behind the home
- A very significant number of trees blown down on the south west and north sides of the house. Unable to penetrate more than 100 meters into the treed portion of the property due to the number and size of downed trees.
- Many of the largest trees were uprooted and pushed over (generally to the west and north), although there were some that were snapped off at trunk level.
- Many smaller trees were broken higher up with some showing possible twisting effects
- Some trees were down at right angles to others although the trend seemed to be straight line knock downs (unable to penetrate debris to see the other side of the property)

Photo Survey

- 4068 east side of home
- 4069 shed off blocks north of home
- 4070 ice shed near home and shed in distance
- Trees down behind the home to west
- 4073 Trees south of home leaning west
- 4074/75/76 Trees behind home down to the west and northwest
- 4078 broken possibly twisted tree
- 4079 two large trees laying west across a large tree laying north
- 4080 large tree with some splintering and possible twisting damage
- 4081 Dog cage in trees behind the house
- 4082/83 trees lying at right angle to each other
- 4084/85 broken possibly twisted tree tops
- 4086 home west side
- 4087/88/89 trees fallen generally to the west and northwest
- 4091 trees down west off driveway (looking towards home)
- 4093/94 Soffit damage on the north east end of home
- 2311 to 2316 damaged trees on west side of Seagull lake Road just north of the property (some possible twisting actions with shredded bark)

Summary

My first impressions after starting this survey were that the trees were down generally in a manner consistent with straight line wind damage. The knock downs generally lay towards the west, northwest and north. There was not a lot of the chaotic multidirectional piled on appearance of tornado damage (ie Matheson). The house had survived the event relatively unscathed. There were however, enough anomalies like trees at right angles to each other and some higher up break offs of smaller trees with possible twist damage that I'll leave it up to the experts to determine if the event may have been a brief touchdown of a "F0". There was some tree damage to a property to the north; however, it was very minor compared to visited property. Perhaps if I could have safely entered deeper into the 100 acre property to assess the destruction zone I would have found more conclusive information.