
**Probable Tornado
Halfway Lake Prov. Park, Ontario
July 28, 2002**

Date- Local: Sunday, July 28th, 2002

UTC: Sunday, July 28th, 2002

Time- Local: 1000

UTC: 1400

Location: Halfway Lake Provincial Park

Region: Greater Sudbury and vicinity

Classification: Probable Tornado

Category: A

Casualties: None

Track Length: 5400 m

Width: 1120 m

Motion: 240

Damage Estimate: None available

F-Scale Rating: F2

Code: TS

Damage Survey: Yes, aerial survey was conducted

Spotter Reports: None

Other Documents:

Aerial survey report

Numerous newspaper articles

Log reports from OSPC

Numerous pictures from the aerial survey

Tornado F-Scale Assessment

Brad L. Rousseau

Tornado Data Production Assistant, Environment Canada

March, 8th, 2011

Classification: Probable Tornado

Date: Sunday, July 28th, 2002

Location: Halfway Lake Prov. Park, Greater Sudbury and vicinity Region

Assessment: F2

F-Code: TS

Explanation of Assessment: Most trees along the path snapped or uprooted. Event was classified as a downburst because it was raining during the damaging winds and appeared to last longer than a tornado would from eyewitness descriptions. There was also evidence of divergent wind damage and radar showed a weak bow-echo type structure. However, after having the 2003 F2 Goose Lake and 2009 F2 Ear Falls tornado events track through the boreal forest and having the long, narrow paths look strikingly similar, it is hard to deny this event tornado status. The path for this event is 100-200.m wide by 3-4 km long - much greater than the 10:1 aspect ratio threshold for a tornado. It must have been completely rain-wrapped, and possibly combined with downburst winds in behind.

Flight over Halfway Lake Tornado path

July 29, 2002

1430-1500 EDT

A tornado struck Halfway Lake Provincial Park at around 10:00 am EDT on Sunday, July 28, 2002. News accounts from eyewitnesses suggest that the event lasted from one minute to four minutes.

The path of the tornado tracked from SW to NE (perhaps closer to WSW to ENE).

The first indications of tree damage on the ground occurred about 1 km SW of the Halfway Lake PP campground. The track runs right through the middle of the campground and crosses Highway 144 on the eastern edge of the park. The track continues for about 500 to 1000 m on the east side of the highway. The track was continuous for about 3 to 4 km.

The track was roughly 100-200 m wide. It was an extraordinary sight due to the laser-beam accuracy with which it hit the campground. The tornado's track on the ground was relatively short, but it could not have more perfectly hit the campground. It was not a glancing blow; the tornado set down, ploughed directly through the camp, and then picked up again just to the east.

I estimate that the tornado was at least a light F3. One of the criteria for an F3 is "forests and farmland flattened". Although the tornado's path was short, it completely flattened almost every tree along its track, as evidenced in the accompanying photos.

Photos:

It was raining, so the photographs aren't the best. These were taken with a digital camera – I have others on film getting developed.

Looking S

Halfway Lake is in the background. Highway 144 is not visible, but runs along the left (east) side of the lake.

The tornado tracked from right to left (W to E) across this picture. There is a strip about of forest about 100 m wide between the campground and the lake that remained virtually unscathed. The main damage track is right through the heart of the campground. This is the Wild Rose camping area.

The forest is mixed boreal – lots of birch and pine. Note in the photos how the birches are mostly bent over or broken at the base, while the pines are snapped off about 5 m above the ground.

Looking SW:

The tornado track starts on the ridge in the background.

The left side (south) of the image shows the undamaged strip along the shore of Halfway Lake. The building in the left centre is undamaged. The devastation on the right side is total. No trees are standing.

The small lake on the right side separates the two main camping areas. Notice the devastation on the far shore of the small lake, in the Hawksnest, camping area.

Looking W:

This is similar to the previous image, but we've zoomed in a little bit. You can see devastation in the foreground and the background. Notice how the trailers and RVs still remain intact and in place. The trees took the punishment and (aside from falling on them) protected the campers.

Another view:

You can really see the pines snapped in half along the right side of this photo.

Pines and birches:

This photo shows nicely the different damage inflicted on the different trees. The pines in the foreground are snapped off about 5 m above the ground. The birches in the background have either been uprooted or bent flat at the base. This pattern is evident throughout the tornado track.

Quick comparison with Pine Lake, Alberta, tornado (July 14, 2000)

These tornadoes were likely similar intensity (F3). The big difference was that the Pine Lake campground was on bald prairie, while the Halfway Lake campground was in thick forest.

Pine Lake had 12 fatalities; Halfway Lake had none.

Looking at the damage from the air, it was evident that despite the terror and danger created by the falling trees, the people at Halfway Lake were spared a much greater casualty total due to the fact they were in a heavily wooded area. The trees clearly bore the brunt of the wind's power and shielded the many light trailers and tents from being picked up and destroyed.

At Pine Lake, all the RVs, trailers, and other vehicles caught in the path of the tornado were completely obliterated. At Halfway Lake, the trees took the punishment. Very few of the vehicles were moved around. There was considerable damage from falling debris, but even tent trailers were left largely intact (unless damaged by falling trees).

It is clear that had the tornado hit an open campground like Pine Lake, there would have been far more injuries and almost certainly fatalities. The 220 occupied camping sites and everything on them would have been completely destroyed.

Eyewitness report from Michel Bechard, Science North Marketing Manager

Michel and his family were preparing to leave the campground when the tornado struck. The family took refuge in their van as the rain intensified. Michel was able to get his canoe loosely tied onto the roof before he took shelter.

The rain intensified to the point where it was difficult to see out the windows. Lightning and thunder were essentially simultaneous. They were aware of some nearby trees coming down, but had no sense of the what was happening beyond their campground. They did not hear any loud wind – just the rain and thunder.

During the event, trees came down around their vehicles, striking some glancing blows, causing some minor body damage. The canoe, however, took a direct hit at one end, knocking it loose. It was thrown about by the wind and destroyed.

As the rain abated, they emerged unscathed to find trees down throughout the campsite. They were along the southern edge of the tornado track.

Report of a possible small tornado in downtown Sudbury, 1600 EDT, Wednesday, July 31, 2002.

A reporter at the Sudbury Star newspaper received a call around 4:00 pm, July 31, from someone who had spotted a funnel cloud under a strong thunderstorm moving across the city of Sudbury. A few minutes later, accompanied by heavy rain and lightning, a strong wind uprooted mature maples, knocked a tree onto an occupied police cruiser, snapped off signs, and scattered tree limbs across much of downtown. Ironically, the Sudbury Star building was right along the path of damage. Power was knocked out downtown for at least five hours.

The damage was localized to a west-east strip just north of Elm St., the main west to east thoroughfare through downtown Sudbury.

Given the report of a funnel cloud and the localized damage indicative of peak wind speeds in excess of 150 km/h, it is possible that a small tornado touched down in Sudbury. However, it was most likely a downburst.

Downburst
Halfway Lake Provincial Park, Ontario
July 28, 2002

Date: Sunday, July 28th, 2002

Time: 1800

Location: Halfway Lake Provincial Park, near Sudbury

Casualties: Four sent to hospital with minor injuries

Damage Estimate: None

Classification: No Tornado

Category: None

Damage Survey: None

Spotter Reports: Four

Other Documents:

Media Reports

Newspaper Articles

sj/s

Spotter Reports, July 28, 2002

CLASSIFICATION: Severe Thunderstorm **SOURCE/WATCHER ID:** The Sudbury Star **EVENT TIME (UTC):** 10-20 **EVENT DAY:** 28.0 **MONTH:** 7.0 **YEAR:** 2002.0 **EVENT DURATION (HR):** 0.0 **(MIN):** 0.0 **DAY OF THE WEEK:** **EVENT LOCALE:** Halfway lake Provincial park on highway 144 **ASOCTD PUBLIC RGN:** Sudbury-Nickel Belt **DETAILED DESCRIPTION:** "-fierce wind ripped through halfway park -massive storm damage has temporarily shut down halfway lake **CONFIRMED F2 MICROBURST**" **INITIAL ASSESSMENT:** YES **SPL WX STATEMENT IN EFFECT ?:** UKN **STATEMENT LEAD TIME (HR): (MIN):** **WATCH IN EFFECT ?:** UKN **WATCH LEAD TIME (HR): (MIN):** **WARNING IN EFFECT ?:** UKN **WARNING LEAD TIME (HR): (MIN):** **TORNADO:** NO **WINDSPEED:** **RAINFALL:** MM **RAIN DURATION:** **HAIL DIAMETER:** MM **HAIL DESCRIPTION:** None **EVENT DESCRIPTION:** Wind/Rain **Mesoscale ?:** YES **Synoptic ?:** NO **Big Event ?:** YES **Statement Est Hit/Miss:** UKN **Watch Est Hit/Miss:** UKN **Warning Est Hit/Miss:** UKN **Separate Event (30km/30min):** UKN **Vetted by:** RUDDICK **Vetted date:** 02/02/03

CLASSIFICATION: Severe Thunderstorm **SOURCE/WATCHER ID:** Canadian Press (News Clipping) **EVENT TIME (UTC):** 10-20 **EVENT DAY:** 28.0 **MONTH:** 7.0 **YEAR:** 2002.0 **EVENT DURATION (HR):** 0.0 **(MIN):** 6.0 **DAY OF THE WEEK:** **EVENT LOCALE:** Halfway Lake Provincial Park **ASOCTD PUBLIC RGN:** Sudbury-Nickel Belt **DETAILED DESCRIPTION:** "- 800 visitors camping at the park when trailers were split in half by tree trunks, with six injured people suffering broken bones or cuts (all treated and released) - it was evacuated and will not re-open before the end of the summer - reported tornado C" **INITIAL ASSESSMENT:** YES **SPL WX STATEMENT IN EFFECT ?:** UKN **STATEMENT LEAD TIME (HR): (MIN):** **WATCH IN EFFECT ?:** UKN **WATCH LEAD TIME (HR): (MIN):** **WARNING IN EFFECT ?:** UKN **WARNING LEAD TIME (HR): (MIN):** **TORNADO:** NO **WINDSPEED:** **RAINFALL:** MM **RAIN DURATION:** **HAIL DIAMETER:** MM **HAIL DESCRIPTION:** None **EVENT DESCRIPTION:** Wind **Mesoscale ?:** YES **Synoptic ?:** NO **Big Event ?:** YES **Statement Est Hit/Miss:** UKN **Watch Est Hit/Miss:** UKN **Warning Est Hit/Miss:** UKN **Separate Event (30km/30min):** UKN **Vetted by:** RUDDICK **Vetted date:** 02/02/03

CLASSIFICATION: Severe Thunderstorm **SOURCE/WATCHER ID:** The Sudbury Star **EVENT TIME (UTC):** 10-20 **EVENT DAY:** 28.0 **MONTH:** 7.0 **YEAR:** 2002.0 **EVENT DURATION (HR):** 0.0 **(MIN):** 0.0 **DAY OF THE WEEK:** **EVENT LOCALE:** Halfway Lake Provincial Park **ASOCTD PUBLIC RGN:** Sudbury-Nickel Belt **DETAILED DESCRIPTION:** "- black spruce trees split trailers and cars covered in falled boughs - campers claim it was **CONFIRMED F2 MICROBURST**" **INITIAL ASSESSMENT:** YES **SPL WX STATEMENT IN EFFECT ?:** UKN **STATEMENT LEAD TIME (HR): (MIN):** **WATCH IN EFFECT ?:** UKN **WATCH LEAD TIME (HR): (MIN):** **WARNING IN EFFECT ?:** UKN **WARNING LEAD TIME (HR): (MIN):** **TORNADO:** POSSIBLE **WINDSPEED:** **RAINFALL:** MM **RAIN DURATION:** **HAIL DIAMETER:** MM **HAIL DESCRIPTION:** None **EVENT DESCRIPTION:** Wind **Mesoscale ?:** YES **Synoptic ?:** NO **Big Event ?:** YES **Statement Est Hit/Miss:** UKN **Watch Est Hit/Miss:** UKN **Warning Est Hit/Miss:** UKN **Separate Event (30km/30min):** UKN **Vetted by:** RUDDICK **Vetted date:** 02/02/03

CLASSIFICATION: Severe Thunderstorm **SOURCE/WATCHER ID:** SUDBURY OPP **EVENT TIME (UTC):** 14-20 **EVENT DAY:** 28.0 **MONTH:** 7.0 **YEAR:** 2002.0 **EVENT DURATION (HR):** 0.0 **(MIN):** 0.0 **DAY OF THE WEEK:** **EVENT LOCALE:** HALFWAY PROVINCIAL PARK **ASOCTD PUBLIC RGN:** Sudbury-Nickel Belt **DETAILED DESCRIPTION:** "REPORT OF TORNADO NW OF SUDBURY. TREES DOWN, SNAPPED/UPROOTED, RANDOMLY FALLEN. 4 PEOPLE INJURED. NO WITNESS OF FUNNEL CLOUD. EVENT BEGAN B/W 10-11AM. INVESTIGATING- UPDATES WILL FOLLOW IN MORE DETAIL. **CONFIRMED F2 MICROBURST**" **INITIAL ASSESSMENT:** YES **SPL WX STATEMENT IN EFFECT ?:** UKN **STATEMENT LEAD TIME (HR): (MIN):** **WATCH IN EFFECT ?:** UKN **WATCH LEAD TIME (HR): (MIN):** **WARNING IN EFFECT ?:** UKN **WARNING LEAD TIME (HR): (MIN):** **TORNADO:** POSSIBLE **WINDSPEED:** **RAINFALL:** MM **RAIN DURATION:** **HAIL DIAMETER:** MM **HAIL DESCRIPTION:** None **EVENT DESCRIPTION:** Wind **Mesoscale ?:** YES **Synoptic ?:** NO **Big Event ?:** YES **Statement Est Hit/Miss:**

UKN Watch Est Hit/Miss: UKN Warning Est Hit/Miss: UKN Separate Event (30km/30min): UKN Vetted by: RUDDICK Vetted date: 02/02/03

CLASSIFICATION: Severe Thunderstorm **SOURCE/WATCHER ID:** The Review- Vankleek Hill (News Clipping) **EVENT TIME (UTC):** 16-40 **EVENT DAY:** 28.0 **MONTH:** 7.0 **YEAR:** 2002.0 **EVENT DURATION (HR):** 0.0 **(MIN):** 0.0 **DAY OF THE WEEK:** **EVENT LOCALE:** Vankleek Hill **ASOCTD PUBLIC RGN:** Cornwall **DETAILED DESCRIPTION:** "UNCONFIRMED F0 TORNADO States tornado touched down on Kilmer Road, uprooting trees and ripping tin off some buildings. 250ft wide path cleared in wooded area. Wheel witnessed being carried away 10 feet." **INITIAL ASSESSMENT:** YES **SPL WX STATEMENT IN EFFECT ?:** UKN **STATEMENT LEAD TIME (HR): (MIN):** **WATCH IN EFFECT ?:** UKN **WATCH LEAD TIME (HR): (MIN):** **WARNING IN EFFECT ?:** UKN **WARNING LEAD TIME (HR): (MIN):** **TORNADO:** POSSIBLE **WINDSPEED:** **RAINFALL:** MM **RAIN DURATION:** **HAIL DIAMETER:** MM **HAIL DESCRIPTION:** None **EVENT DESCRIPTION:** Tornado **Mesoscale ?:** YES **Synoptic ?:** NO **Big Event ?:** YES **Statement Est Hit/Miss:** UKN **Watch Est Hit/Miss:** UKN **Warning Est Hit/Miss:** UKN **Separate Event (30km/30min):** UKN **Vetted by:** RUDDICK **Vetted date:** 02/02/03

CLASSIFICATION: Severe Thunderstorm **SOURCE/WATCHER ID:** Observer- Sarnia (News Clipping) **EVENT TIME (UTC):** 18-20 **EVENT DAY:** 28.0 **MONTH:** 7.0 **YEAR:** 2002.0 **EVENT DURATION (HR):** 0.0 **(MIN):** 0.0 **DAY OF THE WEEK:** **EVENT LOCALE:** Sarnia **ASOCTD PUBLIC RGN:** Sarnia-Lambton **DETAILED DESCRIPTION:** "Trees and branches blown down along river. Power outages, lawn furniture blown over. 1.5 inches of rain reported. Duration unknown." **INITIAL ASSESSMENT:** YES **SPL WX STATEMENT IN EFFECT ?:** UKN **STATEMENT LEAD TIME (HR): (MIN):** **WATCH IN EFFECT ?:** UKN **WATCH LEAD TIME (HR): (MIN):** **WARNING IN EFFECT ?:** UKN **WARNING LEAD TIME (HR): (MIN):** **TORNADO:** NO **WINDSPEED:** **RAINFALL:** 1.5 INCH **RAIN DURATION:** **HAIL DIAMETER:** MM **HAIL DESCRIPTION:** None **EVENT DESCRIPTION:** Wind/Rain **Mesoscale ?:** YES **Synoptic ?:** NO **Big Event ?:** YES **Statement Est Hit/Miss:** UKN **Watch Est Hit/Miss:** UKN **Warning Est Hit/Miss:** UKN **Separate Event (30km/30min):** UKN **Vetted by:** RUDDICK **Vetted date:** 02/02/03

CLASSIFICATION: Severe Thunderstorm **SOURCE/WATCHER ID:** Clint Nickle (23 yrs old) **EVENT TIME (UTC):** 20-30 **EVENT DAY:** 28.0 **MONTH:** 7.0 **YEAR:** 2002.0 **EVENT DURATION (HR):** 0.0 **(MIN):** 0.0 **DAY OF THE WEEK:** **EVENT LOCALE:** Kosh Lake (prev known as Kasshabog Lake) **ASOCTD PUBLIC RGN:** Peterborough and the Kawarthas **DETAILED DESCRIPTION:** "Tornado sighting...he saw trees and branches swirling about 100 yards away. Tornado looked like it was about 50 yards wide. Clint said that he heard a loud noise...very strong winds. It wa" **INITIAL ASSESSMENT:** YES **SPL WX STATEMENT IN EFFECT ?:** UKN **STATEMENT LEAD TIME (HR): (MIN):** **WATCH IN EFFECT ?:** UKN **WATCH LEAD TIME (HR): (MIN):** **WARNING IN EFFECT ?:** UKN **WARNING LEAD TIME (HR): (MIN):** **TORNADO:** F1 **WINDSPEED:** **RAINFALL:** MM **RAIN DURATION:** **HAIL DIAMETER:** MM **HAIL DESCRIPTION:** None **EVENT DESCRIPTION:** Tornado **Mesoscale ?:** YES **Synoptic ?:** NO **Big Event ?:** YES **Statement Est Hit/Miss:** UKN **Watch Est Hit/Miss:** UKN **Warning Est Hit/Miss:** UKN **Separate Event (30km/30min):** UKN **Vetted by:** RUDDICK **Vetted date:** 02/02/03

CLASSIFICATION: Severe Thunderstorm **SOURCE/WATCHER ID:** The Examiner (News Clipping) **EVENT TIME (UTC):** 20-30 **EVENT DAY:** 28.0 **MONTH:** 7.0 **YEAR:** 2002.0 **EVENT DURATION (HR):** 0.0 **(MIN):** 7.0 **DAY OF THE WEEK:** **EVENT LOCALE:** Kasshabog Lake **ASOCTD PUBLIC RGN:** Peterborough and the Kawarthas **DETAILED DESCRIPTION:** "CONFIRMED F1 TORNADO (AERIAL SURVEY CONFIRMED VERY BRIEF TOUCHDOWN) - noise like a freight train - debris in the air - visual confirmation of a torando - cut a swath about 500 ft on the ground - some roof damage and trailer was demolished - moved over w" **INITIAL ASSESSMENT:** YES **SPL WX STATEMENT IN EFFECT ?:** UKN **STATEMENT LEAD TIME (HR): (MIN):** **WATCH IN EFFECT ?:** UKN **WATCH LEAD TIME (HR): (MIN):** **WARNING IN EFFECT ?:** UKN **WARNING LEAD TIME (HR): (MIN):** **TORNADO:** NO **WINDSPEED:** **RAINFALL:** MM **RAIN**

DURATION: HAIL DIAMETER: MM HAIL DESCRIPTION: None EVENT DESCRIPTION: Tornado
Mesoscale ?: YES Synoptic ?: NO Big Event ?: YES Statement Est Hit/Miss: UKN Watch Est Hit/Miss: UKN
Warning Est Hit/Miss: UKN Separate Event (30km/30min): UKN Vetted by: RUDDICK Vetted date: 02/02/03

Pictures Konienred

rom D.S. 115

'Looking W 72 ...'

'Looking SW 72 ...'

" S " " " "

Another view "

XP-0048

DSCN 0074 ? ?

" 0076 3

- 145

- 146

- 147

- 135 (east facilities)

110, 119, 118 (main building)

116, 117 (shore Halfway Lake)

104

locations Ulen.

DSCN 0017

DSCN 0059 (maybe)

ft p2 drive

161 & 162 match up ↙ main building

→ small green building adj. to orange canopy
& large building ("+" shaped from above)

132 - convergence ?

138 - looking E @ Bailey Creek ?

113, 114 linked to 105

104 - confirm overlap / convergence S of
Burnt Ridge Lake

Lane Studies → Text Run

Halfway Lake - July 28, 2002

Questions:

- any reports for radar identified cells? on July 30th, 2002?
- ~~any reports for radar identified cells?~~ ✓
- actual damage survey?
- who took aerial pics?

Additional Notes

- more damage rept'd further along path
- looked like bow echo
- very similar to Goose Lake event
- D. Sills

acquired Photos:

DSCN0051 → looking ~NW from Halfway Lk. bridge

Radars (Britt or Pitt ~~Area?~~)

- no megar funnel on Radar Extractor

* Pic of map w/ general blowdown ~~outline~~
(068.jpg)