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**Confirmed Tornado  
Bolton, Ontario  
September 14, 2000**

**Date- Local:** Thursday, September 14, 2000

**UTC:** Thursday, September 14, 2000

**Time- Local:** 1630

**UTC:** 2030

**Location:** Innis Rd, between Bolton and Sandhill

**Region:** Halton- Peel

**Classification:** Confirmed Tornado

**Category:** B

**Casualties:** None

**Track Length:** None available

**Width:** None available

**Motion:** None available

**Damage Estimate:** None available

**F-Scale Rating:** F0

**Code:** TS

**Damage Survey:** None available

**Spotter Reports:** One

**Other Documents:**

Personal Correspondence between David Sills, MSC King Radar, and Des Cairns

Event Summary by Des Cairns

Three printed photographs by Des Cairns

Four explanatory maps

One Radar graphic printout

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*sjs*

Meteorological Service of Canada  
4905 Dufferin Street, ARMP  
Downsview, Ontario M3H 5T4  
**CANADA**

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## **Tornado F-Scale Assessment**

Sarah J. Sriver

Tornado Data Production Assistant, Environment Canada

April 21<sup>st</sup>, 2004

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**Classification:** Confirmed Tornado

**Date:** Thursday, September 14, 2000

**Location:** Bolton, Halton-Peel Region

**Assessment:** F0

**F-Code:** TS

**Explanation of Assessment:** Some small trees snapped.

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*SJS*

Metological Service of Canada  
105 Dufferin Street, ARMP  
Mississauga, Ontario M3H 5T4

**CANADA**

## **Sills, David [Ontario]**

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**From:** Des[SMTP:dcairns9@home.com]  
**Sent:** September 17, 2000 11:45 AM  
**To:** David.Sills@ec.gc.ca  
**Subject:** Sept. 14 funnel clouds.  
**Importance:** High

Dave...on the afternoon of September 14 I set out for one of my favourite autumn fishing holes. I was driving north on Innis Lake Road (between Caledon East and Bolton, Ontario). At precisely 4:30 pm I came over a rise in the road and was confronted by a wall of rotating black cloud very near the ground. Before I knew what was going on a funnel appeared out of the base of a low hanging (and rotating cloud). I had my camera with me and pulled over. Unfortunately this well formed funnel dissipated before I had a chance to get set up. I continued to watch (and follow) this rotating mass of cloud. It produced several more funnels. I snapped 6 or 7 shots of some ragged funnels and one which was well developed. The wind was howling and the rain was being driven horizontally. I saw several what appeared to be rain shafts spiraling rapidly from the ground up. The temperature dropped dramatically with the passage of this bank of cloud. Do you have any information on what I saw? Were these cold-core funnels? I would be more than happy to send you a map of the precise location and photos when they are developed.

Des Cairns

## **Sills, David [Ontario]**

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**From:** Des[SMTP:dcairns9@home.com]  
**Sent:** September 22, 2000 10:07 AM  
**To:** David.Sills@ec.gc.ca  
**Subject:** Sept. 14  
**Importance:** High

Dave...here is a map of the area I spoke of earlier. When I set out that day I knew I was probably driving toward a heavy shower, but certainly did not expect what I saw. I still have 12 shots left in my camera. I think I will try to use them up this weekend. I hope the pictures are revealing. My camera was set up for taking close-ups of fish and not rotating clouds and funnels. Here is a description of the map:

**A:** This is where I first encountered rotation as I was driving north. The arrow indicates the first funnel I saw. I pulled over off of Innis Lake Road and on to Castlederg Sideroad. The cloud that produced the funnel passed right over head heading south. Time: 4:30 pm

**B:** Once on the south side of Castlederg Sideroad the cloud mass produced several thin, rapidly rotating and very short-lived funnels. They seemed almost too short lived to photograph. After drifting a little further south a larger funnel appeared with a shroud of thinner cloud rotating around it (rain?) The funnel appeared in/over a thicket of trees and dissipated. Only a few minutes had passed and I moved on.

**X:** I got back on to Innis lake road driving south. The X is where I pulled over and called my pal Dave Patrick to ask him what the hell was going on. Unfortunately he was not home. Time: 4:40 pm.

**C:** After following the rotating cloud south I pulled over again on Healey Road. From this vantage I observed several occurrences of very thin columns of cloud spiraling from the ground up. These also appeared in a thicket of trees. While the general direction of cloud before this event was easterly, this rotation had a obvious southward motion. The red arrows indicate direction of the rotating mass. Time: 4:45-4:50 pm.

I will email pictures soon and see what you think.

Des



sep14a.jpg

**Sills, David [Ontario]**

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**From:** Des[SMTP:dcairns9@home.com]  
**Sent:** September 22, 2000 11:49 AM  
**To:** David.Sills@ec.gc.ca  
**Subject:** Re: Sept. 14

Dave...no I did not hear of or see any damage. The first funnel I saw did not come into contact with the ground. The second funnel I saw seemed to be on or near the ground, but the landscape and trees prevent me from saying anything certain. The thin spirals from the ground up did seem (to my eyes) to originate from the ground. I may take a drive by again. I would hate to send you out to this location if you were just wasting your time. Anyway, I am off to Sauble Beach for the weekend and praying for water spouts (most people go away to the beach hoping for sun and warmth while I hope for stormy weather-a life long affliction).

DES

## **Sills, David [Ontario]**

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**From:** Des[SMTP:dcairns9@home.com]  
**Sent:** September 26, 2000 11:09 AM  
**To:** David.Sills@ec.gc.ca  
**Subject:** Reply to question.

Hello Dave...well I did not use up my film but I will get it developed this week anyway. I hope they will prove useful to you. As you well know it is hard to capture rotation on still film. I do believe however, that I caught some of those upward spirals I was talking about on film. The well developed funnel I snapped will certainly not be as clear as the landspout photos on your site. There was much rain and a curtain of rotating cloud between myself and it. A funnel should be visible though. The first funnel I saw (which did not touch the ground during my view of it) was hanging at a 45 degree angle when I encountered it. The second (which I photographed) was at a 90 degree angle (straight up and down in other words). If you were up that way you may have noticed when driving north on Innis Lake Road (north of King) you approach a cemetery on the left. This is where your view of the horizon is completely blocked. Just past that is the rise in the road where I encountered this weather.

Anyway I will answer your latest question with another map. The yellow arrows indicate my best estimate of wind direction when I pulled over at these two locations. I really don't know if the wind was associated with the rotating cloud over head. The sustained gust I felt at Healey Road certainly came from a different direction than when I pulled over at Castlederg Sideroad (where the wind was not nearly as strong). The middle arrow represents the wind direction when I pulled over to try and reach Dave Patrick. This wind direction I am very certain of because I had the window rolled down, watching the sky and getting soaked by rain. When I finally continued on north toward my fishing destination I did notice an immediate substantial drop in temperature. This would lead me to believe that the wind was part of a frontal passage (as you put it), but I am not a severe weather expert (and don't pretend to be). Another (important?) thing I forgot to tell you: When I pulled over at Healey Road there was a very brief hail shower (very very small stones). I would say it lasted 45 seconds. Again, on the map, the orange dots represent where I observed upward spirals (or as close as I can plot them). I hope my map tells you something. By the way. Is there somewhere I can access a radar image of this event? I know you said it wasn't very revealing.

DES



sep14b.jpg

**Sills, David [Ontario]**

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**From:** Des[SMTP:dcairns9@home.com]  
**Sent:** September 26, 2000 12:43 PM  
**To:** David.Sills@ec.gc.ca  
**Subject:** Re: Reply to question.

>  
> Yesterday, I got a chance to look at the King Doppler radar data for Sept  
> 14  
> 4:30pm and there is a really nice gust front / shallow cold front moving  
> through right then, but very little in the way of vigorous convection so  
> the funnels (and now hail) are a bit surprising (but not impossible!). I  
> would have thought that these funnels might be gustnadoes except for the  
> fact that you said the cloud base was also rotating. This implies either a  
> supercell-type tornado or a landspout. From Doppler radar, there's no way  
> it  
> was a supercell-type so it looks good for being a landspout.  
>

Thanks for the link Dave. What you say above is the precise reason I  
contacted you. When I encountered this weather I felt this very suprising.  
The weather leading up to my encounter gave no clue of this type of  
situation. I have experienced a few wall clouds, a funnel cloud and sat  
under a tornadic thunderstorm (July 17 near Violet Hill), but this was truly  
remarkable. I will send along pics in the next day or two.  
DES

**Sills, David [Ontario]**

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**From:** Des[SMTP:dcairns9@home.com]  
**Sent:** September 27, 2000 12:46 PM  
**To:** David.Sills@ec.gc.ca  
**Subject:** Pics

Dave...first the good news: I have pictures! Now the bad news: In my haste I took them to a quickie developer who almost completely ruined them. Thankfully they are salvageable. I scanned one (all I have time for at the moment) and then using Adobe PhotoShop clicked on equalize to try and improve the brightness/contrast. This improved the view of the main funnel but considerably faded the view of the second funnel (which is much more easy to see on the original). As you will see that second funnels spirals at about 45 degrees from the ground to the cloud above. I found out the name of the land owner where there may have been a (possible) touchdown. I will gladly hand over the negatives to you if you can have them repaired (after the disastrous job the developer did). This is all I have time for now. I am out until about 10:30pm tonight. Be in touch.

DES

For pics: <http://members.home.net/dcairns9/funnels.htm>



## **Sills, David [Ontario]**

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**From:** Des[SMTP:dcairns9@home.com]  
**Sent:** September 29, 2000 12:24 PM  
**To:** David.Sills@ec.gc.ca  
**Subject:** More than happy to answer questions.  
**Importance:** High

1. When the funnel passed directly overhead, did you notice winds at the surface changing erratically, or becoming calm, ie. do you think the circulation extended to the ground, even if the winds were not damaging?



sep14cc.jpg

The funnel did not pass directly overhead. The first funnel had dissipated by the time I pulled over. The cloud lowering that produced the funnel is what passed directly overhead. By this time it had retreated a considerable distance upward only to drop back down after it had passed. The red arrow indicates it's passing. It was rotating, but not particularly quickly. This lowering certainly had great similarity to a wall cloud. The yellow arrow indicates the breadth (by my estimation) of a large slowly rotating cloud mass that produced all of these events within it. Unfortunately, at the Castlederg location I did not take much note of wind. Frankly, as the cloud lowering passed overhead I got back in my vehicle because I was spooked and ready to move (which I did not immediately do). To my recollection however, the wind was blowing uniformly to the SSE and not violently.

2. You refer to a "rotating mass". Was the parent cloud base rotating or was this rotating mass part of the funnel cloud(s)? From the description I read, it seems like a rotating wall cloud but I just want to make sure.



sep14dd.jpg

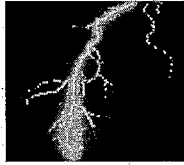
A: This is the outside boundary of the cloud mass that produced these events. It is indicated on the map from question one. It's rotation was steady, but it was not racing. B: This cloud's rotation was slightly faster, but still not racing. C: This was very fast rotation sustained for perhaps 30 seconds. D: The rotation here was extremely rapid and lasted maybe 5 seconds. This was one of several. So yes, indeed the parent cloud base was rotating as was everything within this structure. The only time I really paid any great attention to the wind in my locale was at Healey Road. Here the wind originated from the SSW and had a buffeting velocity. In other words it buffeted my vehicle noticeably. Like I said above, the structure of cloud lowering certainly resembled a wall cloud, but of course, I am no scientist.

3. Did you contact that land owner? If not, I can if you give me the contact info.

I did not contact the land owner, but their name is Currie (which is on the mailbox). As you drive north on Innis Lake Road they are on the right hand side in an old stone farm house between King Road and Castlederg Sideroad.

DES

# Some weather we're having!



On the afternoon of September 14, 2000, I was driving north near Caledon East, Ontario, it was a humid and rainy day. Before I left home I checked weather radar on the web to see when the rain might end. The radar showed that I was going to encounter a fairly heavy shower, but I had no inkling of what I was about to see.

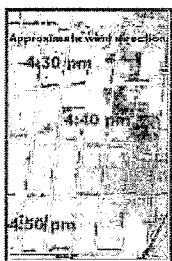
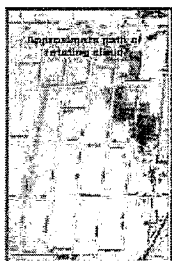


As I passed King Street heading north on Innis Lake road the rain intensified and the clouds thickened just as the weather radar indicated they would. I approached a small hill while still travelling north on Innis Lake Road. My view of the horizon at this point was completely blocked. When I crested the hill and could see the entire horizon again I was stunned at the view. The sky, that is to say heavy black clouds, were virtually on the ground and heading in the opposite direction of the wind and rain. I was awed by the site and immediately knew I had stumbled upon something special.



Suddenly, to my right, a huge smoke-coloured funnel appeared and dangled out of a cloud base menacing the ground. It looked surreal against the backdrop of a wall of charcoal-black cloud. At this point I had reached the intersection of Castlederg Sideroad. I pulled over as quickly as I could and fumbled for the camera which I was fortunate to have with me. By the time I came to a stop and had my camera at the ready the funnel had dissipated. A little disappointed I had missed it, I was confident that the show wasn't over yet. I glanced at the clock: 4:30 p.m. I continued a couple of hundred yards east on Castlederg Sideroad and positioned myself almost in the path of the cloud that produced the funnel (damn foolish?). As it passed overhead it was slowly rotating counter-clockwise. In fact, a massive wall of cloud surrounding me was rotating counter-clockwise. Sure enough, a couple of minutes after it's passage and now located to the south of me this turning cloud funneled toward the ground. Camera in hand...click!

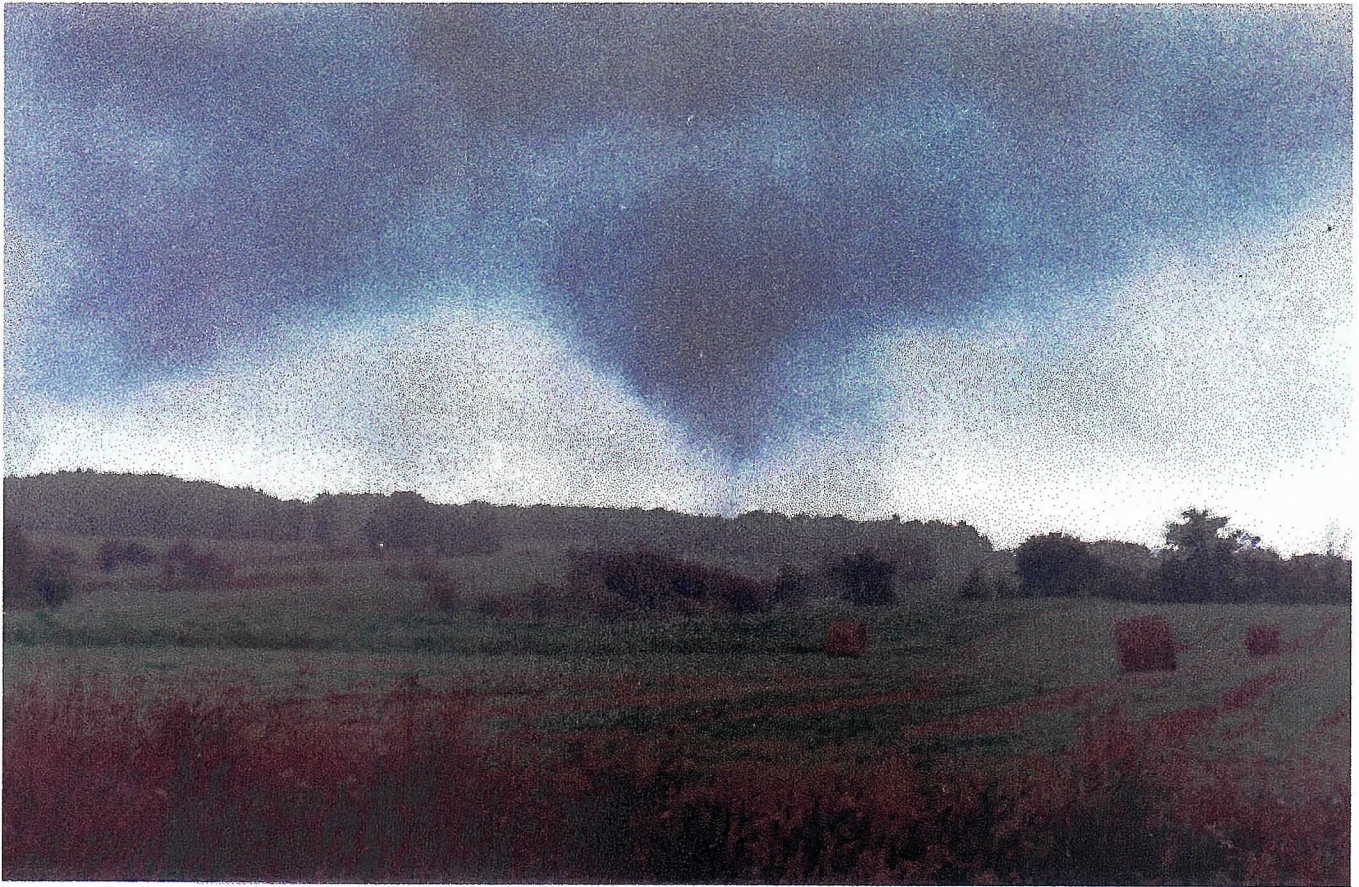




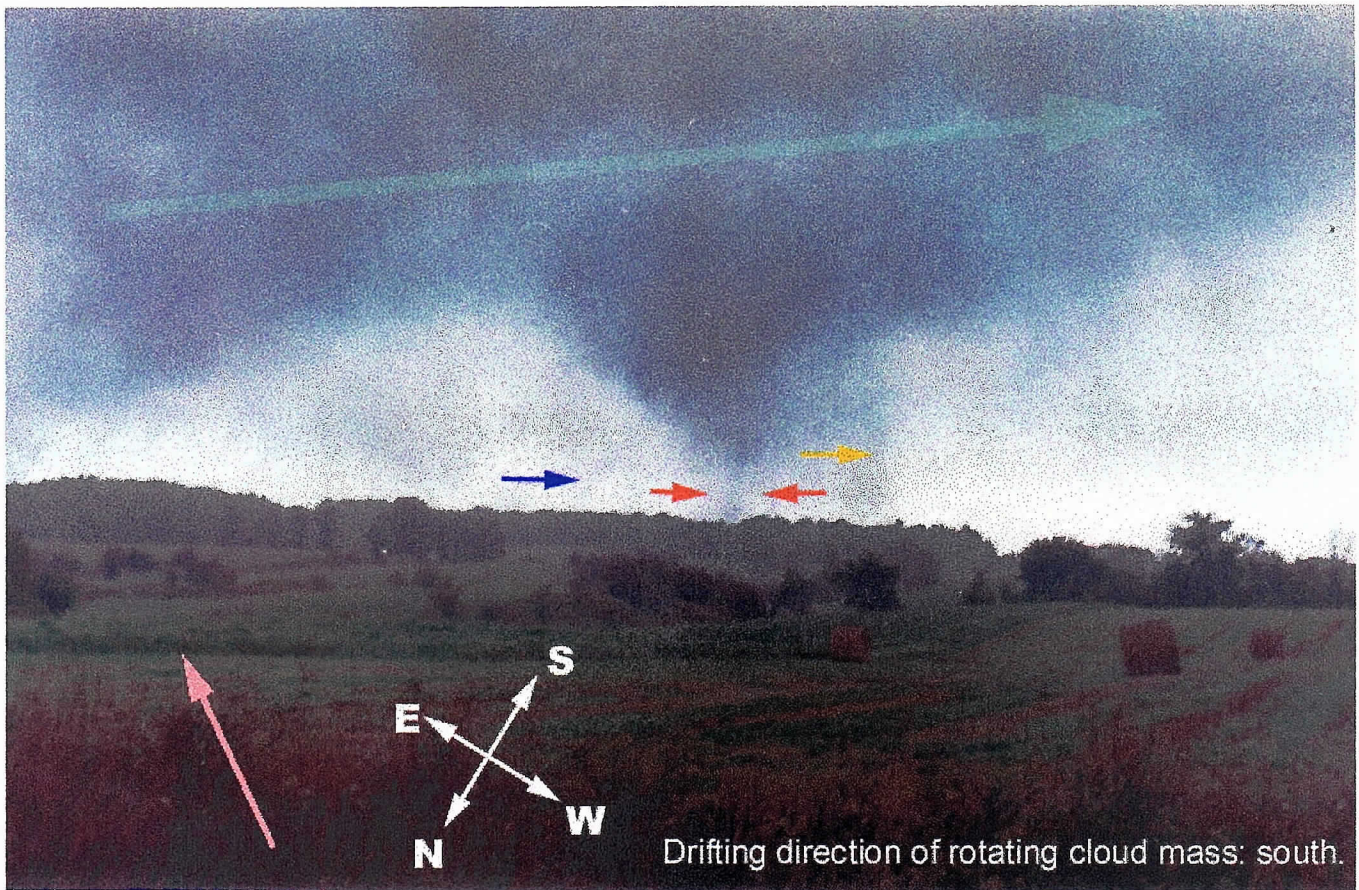
I followed the rotating clouds for about 30 minutes until they ceased and dissipated. I took several pictures of funnels. Particularly interesting among these were the ones that seemed to spiral from the ground up.

Unfortunately the developer I entrusted with my film botched it completely. I will get around to having the negatives looked at by a professional. Any touchdown that occurred would have been in bush and a considerable distance from the road. I did not investigate since this is private property. During the time I observed cloud rotation no buildings or other property were threatened.









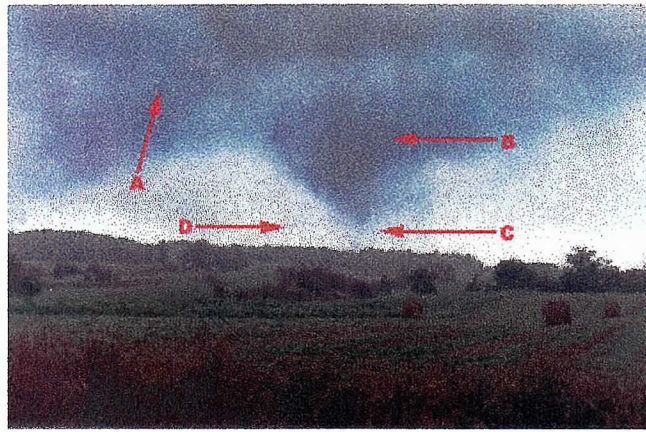
Large light green arrow: Foreground cloud and it's direction of rotation.

Yellow arrow: Rotating curtain of cloud/vapour.

Red arrows: Funnel at almost 90 degrees.

Blue arrow: Second funnel at almost 45 degrees.

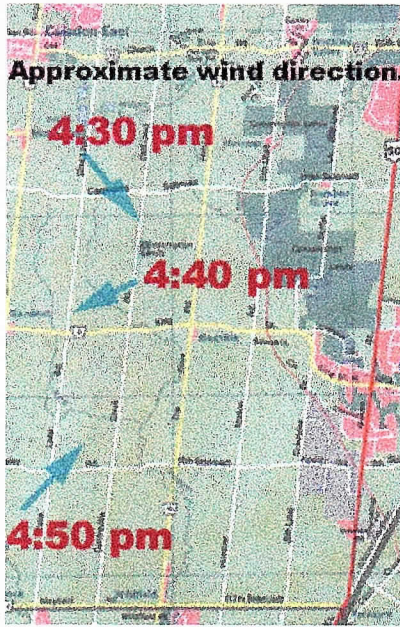
Pink arrow: Wind direction.

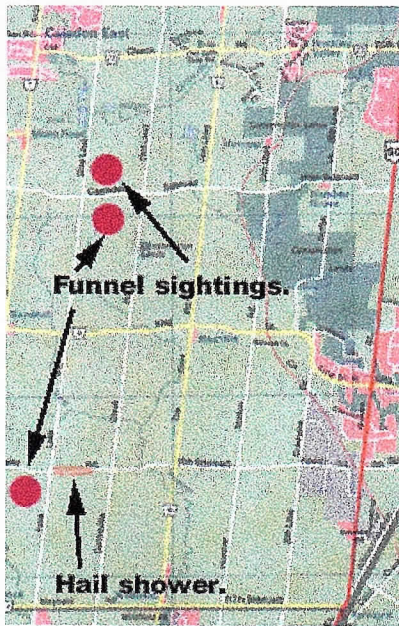




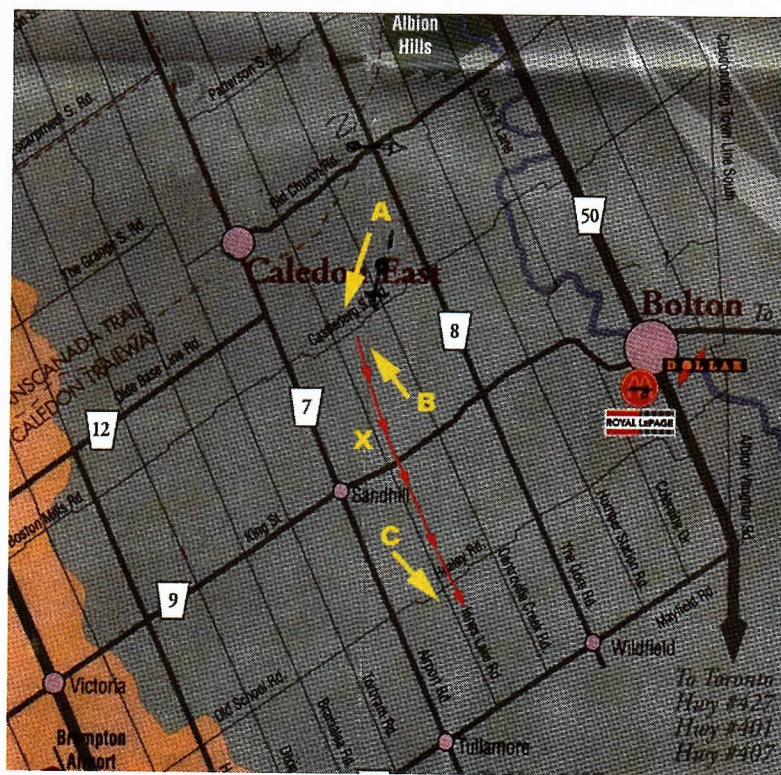




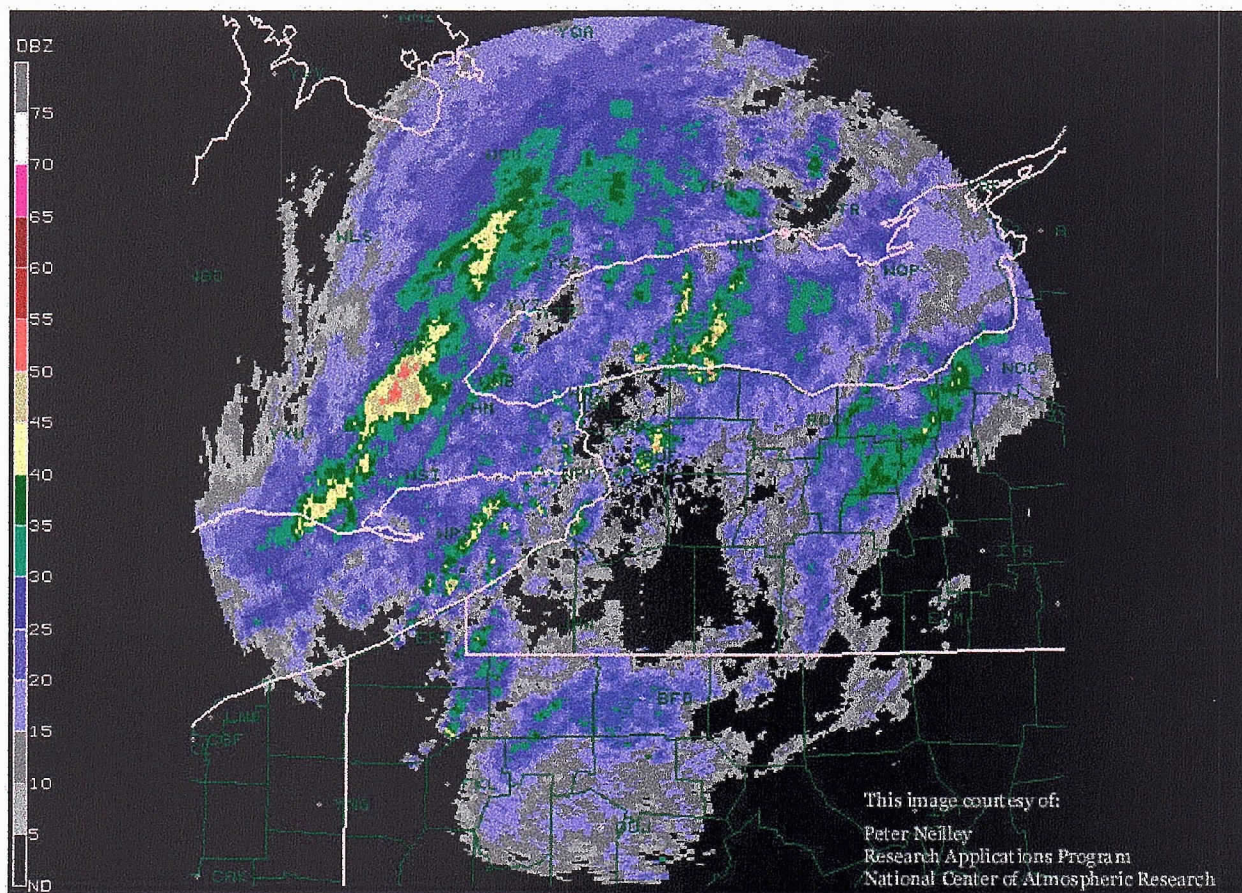




2. snapped tree







## Spotter Reports, September 14, 2000

**CLASSIFICATION:** Severe Thunderstorm **SOURCE/WATCHER ID:** Des Cairns via Dave Sills **EVENT TIME (UTC):** 20-30 **EVENT DAY:** 14.0 **MONTH:** 9.0 **YEAR:** 2000.0 **EVENT DURATION (HR):** 0.0 **(MIN):** 15.0 **DAY OF THE WEEK:** **EVENT LOCALE:** Along Innis Lake Rd. between Sandhill and Bolton **ASOCTD PUBLIC RGN:** Halton-Peel **DETAILED DESCRIPTION:** "Several funnels spotted associated with rotating parent cloud, some funnels were ground up, others cloud base down, funnels tracked for ~8 km, accompanied by horizontal rain, no damage reported but will check on that" **INITIAL ASSESSMENT:** UNCONFIRMED **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:** YES F? **WINDSPEED:** **RAINFALL:** MM **RAIN DURATION:** **HAIL DIAMETER:** MM **HAIL DESCRIPTION:** **EVENT DESCRIPTION:** Tornado **Mesoscale ?:** **Synoptic ?:** **Big Event ?:** **Statement Est Hit/Miss:** UKN **Watch Est Hit/Miss:** UKN **Warning Est Hit/Miss:** UKN **Separate Event (30km/30min):** **Vetted by:** Myatt- **Lat/long Sandhill** **Vetted date:** 23/07/2002

**CLASSIFICATION:** Severe Thunderstorm **SOURCE/WATCHER ID:** North Bay Observer. **EVENT TIME (UTC):** 22-00 **EVENT DAY:** 14.0 **MONTH:** 9.0 **YEAR:** 2000.0 **EVENT DURATION (HR):** 0.0 **(MIN):** 5.0 **DAY OF THE WEEK:** **EVENT LOCALE:** North Bay (over Trout Lake.) **ASOCTD PUBLIC RGN:** North Bay-Nipissing **DETAILED DESCRIPTION:** "two independant reports of funnel clouds over trout lake near north bay. all funnel clouds were short lived." **INITIAL ASSESSMENT:** NO **SPL WX STATEMENT IN EFFECT ?:** NO **STATEMENT LEAD TIME (HR): (MIN):** **WATCH IN EFFECT ?:** NO **WATCH LEAD TIME (HR): (MIN):** **WARNING IN EFFECT ?:** NO **WARNING LEAD TIME (HR): (MIN):** **TORNADO:** F0 **WINDSPEED:** **RAINFALL:** MM **RAIN DURATION:** **HAIL DIAMETER:** MM **HAIL DESCRIPTION:** **EVENT DESCRIPTION:** Waterspout **Mesoscale ?:** **Synoptic ?:** **Big Event ?:** **Statement Est Hit/Miss:** UKN **Watch Est Hit/Miss:** UKN **Warning Est Hit/Miss:** UKN **Separate Event (30km/30min):** **Vetted by:** **Vetted date:**