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**Confirmed Tornado  
Elmvale, Ontario  
June 2, 1998**

**Date- Local:** Tuesday, June 2<sup>nd</sup>, 1998

**UTC:** Tuesday, June 2<sup>nd</sup>, 1998

**Time- Local:** 1605

**UTC:** 2005

**Location:** Elmvale

**Region:** Barrie-Orillia-Midland

**Classification:** Confirmed Tornado

**Category:** A

**Casualties:** None

**Track Length:** None available

**Width:** None available

**Motion:** None available

**Damage Estimate:** None available

**F-Scale Rating:** F1

**Code:** VF

**Damage Survey:** Robert J. Kuhn, Toronto Regional Weather Centre

Randy Mawson, non-EC investigator

**Spotter Reports:** One

**Other Documents:**

Damage survey by Robert J. Kuhn

Damage survey by Randy Mawson

Email by/from Ela Ros, EC Ontario

Text copy of the Warnings

Maps of the RCTO Significant Weather Prog

Media Reports

Newspaper Articles

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*sjs*

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

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## **Tornado F-Scale Re-Assessment**

Sarah J. Scriver

Tornado Data Production Assistant, Environment Canada

April 6<sup>th</sup>, 2004

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**Classification:** Confirmed Tornado

**Date:** Thursday, June 2<sup>nd</sup>, 1998

**Location:** Elmvale, Barrie-Orillia-Midland Region

**Original Assessment:** F2

**Re-Assessment:** F1

**F-Code:** VF

**Explanation of Assessment:** Two 5-ton manure spreaders moved 200-300m away, part of the metal roof of a CO-OP building was blown 600m, ¾ inch steel bolts on the leg of a silo were sheared, a fully loaded chemical storage building was moved 10-12" off of it's concrete slab, hydro lines were snapped, and trees were downed. Due to the long distance the manure spreaders were thrown, this event is rated an F1. There is no evidence of an F2; this event was mis-rated.

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SJS

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

04/06/98

Prepared by: Chris Marshall

## Rough Summary of Damage in the Elmvale Area

### Emvale CO-OP:

Located just south of Emvale on hwy #27 and the 8<sup>th</sup> Concession (See Map).

The manager of the CO-OP showed us around and told us his story since he was inside the main building of the facility when the storm struck.

### Observed Damage:

- (FO) • Section of metal roof partially removed with one section being blown about 500-600m across highway 27.
- (FO-AI) • Small limbs (about 4-5") from trees across a field were lodged into the metal siding on the wall of the main CO-OP building.
- (FO-FI) • The most major damage was to the "leg" of the silo which is some sort of loading/unloading mechanism. The steel structure was about 40-50 ft tall and was knocked to the ground and bent in the middle. It was a new structure being added only 3 months prior to the storm. The 3/4" stainless steel bolts that attached the leg to the silo were sheared right off.
- Just across from the silo (40-50 ft away) that was damaged an older silo and loading mechanism were left untouched.
- A fully loaded 15x30 ft chemical storage building was moved 10-12" off its concrete slab.
- F1  
(F3?)  
Dave... • Two 5 ton manure spreaders were tossed 200-300m into a wheat field with one of them sustaining substantial damage.
- FC • One the other side of the CO-OP building the guide wire from the hydro poles snapped although the poles were left standing. The hydro lines had grass hanging in them and there was lots of debris from trees that were at the other side of the field to the west.
- Employees at the Do It building center across hwy27 from the CO-OP claim to have seen the funnel cloud coming across the field, but they were not working on Wednesday.

### Just down the 8<sup>th</sup> Concession from the CO-OP:

- FO • In the front yard of home there were a group of trees that were down.
- FO • The largest of the trees had a 3ft diameter trunk and the tree was literally shredded although the inside of the tree was rotted.
- There was debris from the damaged trees lodged in the branches of those trees that were left untouched. The largest of these was a 5" limb that was found in a tree about

20m from in which it was blown from. Most of the smaller branches on the ground had been cleaned up prior to our visit.

Further South East on the 8<sup>th</sup> Concession:

- FL • On the East side of the road a whole group (10-12) of poplar trees were down in one area.
- FG • Trees with 5-8" trunks were snapped right off leaving many limbs caught up in surrounding trees.
- FO • Lots of small branches were carried across the road.

Highway 92 just west of Simcoe Side Road 10:

- FL • On the front lawn of a farm house there was a row of very large trees down.
- FG • 2 large oak and 2 maples were ripped apart scattering branches everywhere.
- FO • The house only about 50 feet away was left untouched as were surrounding trees.
- FG • The storm also took down a section of fence in their field to the east.

Simcoe Side Road 11 and Cedarlane:

- FL • Two 12-14" maples down on the roof of a house or cottage.
- FL • The maples were uprooted while nearby pine trees (10" trunks) were snapped right off about 15 ft off of the ground.
- FO • On the other side of Cedarlane there were another couple of trees down.

Concession #7 and Highway 27 (East of the CO-OP):

- We found more trees uprooted and some insulation caught in the wire fencing that maybe blew from the CO-OP when the roof was damaged.

2<sup>nd</sup> Road North South East of the 7<sup>th</sup> Concession:

- FL • At the Maplefront farm one large maple tree out of a line was knocked down with the trunk being snapped about 8 ft off the ground.
- There was lots of debris as the tree was really torn apart.
- Other Maples on either side were left untouched although they were littered with debris from their neighbor.

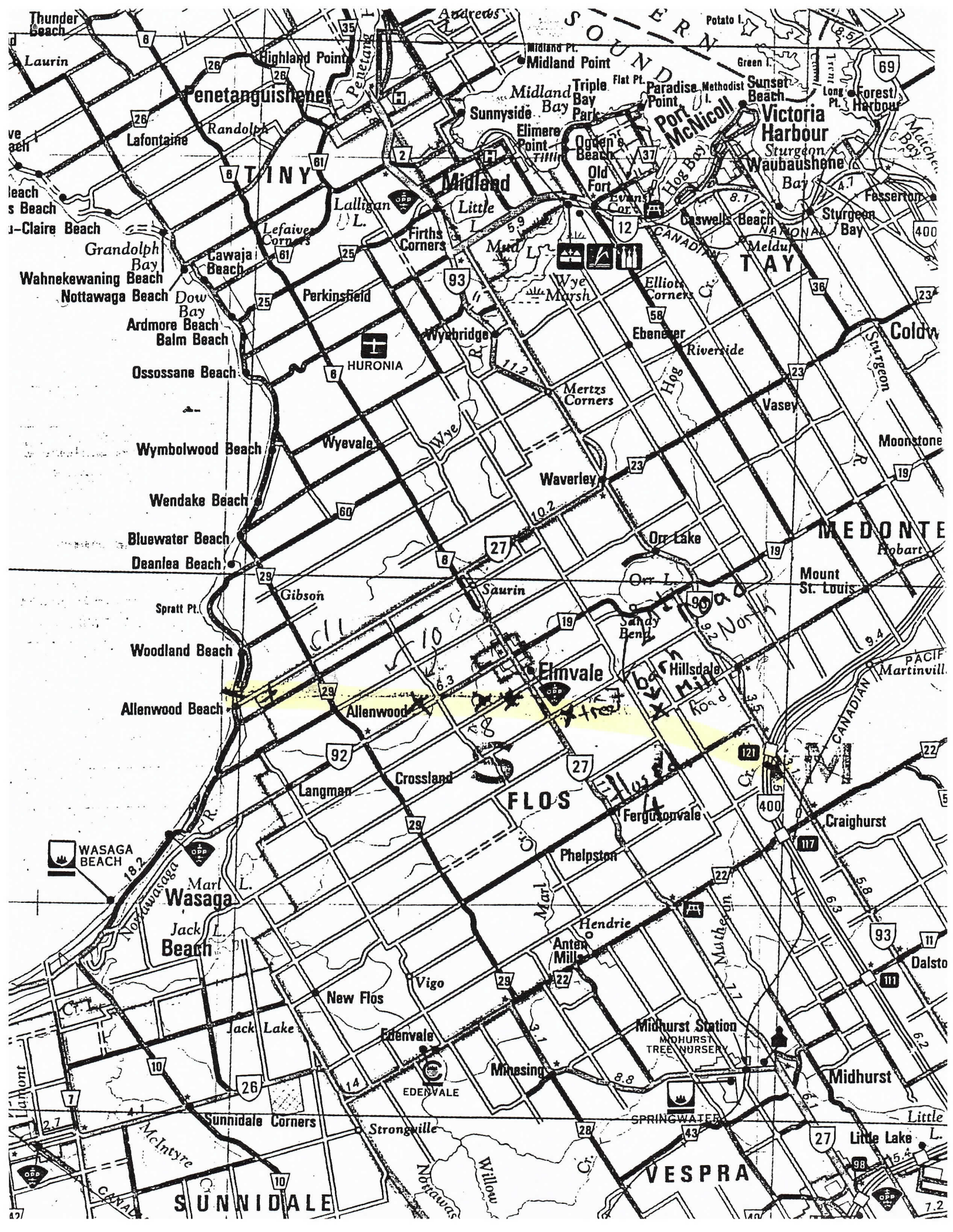
2<sup>nd</sup> Road South and Mill Road:

- FO • About 500m away from the Maple on 2<sup>nd</sup> Road large barn had half of its roofed knocked down.

- The roof was not carried away and it was an old barn to start with but it appeared to be a newer metal roof.

Just East of the hwy 400 and hwy 94 Interchange:

- P0* • We found more trees down in this area.
- P1* • Two large trees with 10-12" trunks were snapped right off 15-20 feet above the ground



04/06/98

Prepared by: Chris Marshall

## **Rough Summary of Damage in the Elmvale Area**

### **Emvale CO-OP:**

Located just south of Emvale on hwy #27 and the 8<sup>th</sup> Concession (See Map).

The manager of the CO-OP showed us around and told us his story since he was inside the main building of the facility when the storm struck.

### **Observed Damage:**

- Section of metal roof partially removed with one section being blown about 500-600m across highway 27.
- Small limbs (about 4-5") from trees across a field were lodged into the metal siding on the wall of the main CO-OP building.
- The most major damage was to the "leg" of the silo which is some sort of loading/unloading mechanism. The steel structure was about 40-50 ft tall and was knocked to the ground and bent in the middle. It was a new structure being added only 3 months prior to the storm. The ¾" stainless steel bolts that attached the leg to the silo were sheared right off.
- Just across from the silo (40-50 ft away) that was damaged an older silo and loading mechanism were left untouched.
- A fully loaded 15x30 ft chemical storage building was moved 10-12" off its concrete slab.
- Two 5 ton manure spreaders were tossed 200-300m into a wheat field with one of them sustaining substantial damage.
- On the other side of the CO-OP building the guide wire from the hydro poles snapped although the poles were left standing. The hydro lines had grass hanging in them and there was lots of debris from trees that were at the other side of the field to the west.
- Employees at the Do It building center across hwy27 from the CO-OP claim to have seen the funnel cloud coming across the field, but they were not working on Wednesday.

### **Just down the 8<sup>th</sup> Concession from the CO-OP:**

- In the front yard of home there were a group of trees that were down.
- The largest of the trees had a 3ft diameter trunk and the tree was literally shredded although the inside of the tree was rotted.
- There was debris from the damaged trees lodged in the branches of those trees that were left untouched. The largest of these was a 5" limb that was found in a tree about

20m from in which it was blown from. Most of the smaller branches on the ground had been cleaned up prior to our visit.

Further South East on the 8<sup>th</sup> Concession:

- On the East side of the road a whole group (10-12) of poplar trees were down in one area.
- Trees with 5-8" trunks were snapped right off leaving many limbs caught up in surrounding trees.
- Lots of small branches were carried across the road.

Highway 92 just west of Simcoe Side Road 10:

- On the front lawn of a farm house there was a row of very large trees down.
- 2 large oak and 2 maples were ripped apart scattering branches everywhere.
- The house only about 50 feet away was left untouched as were surrounding trees.
- The storm also took down a section of fence in their field to the east.

Simcoe Side Road 11 and Cedarlane:

- Two 12-14" maples down on the roof of a house or cottage.
- The maples were uprooted while nearby pine trees (10" trunks) were snapped right off about 15 ft off of the ground.
- On the other side of Cedarlane there were another couple of trees down.

Concession #7 and Highway 27 (East of the CO-OP):

- We found more trees uprooted and some insulation caught in the wire fencing that maybe blew from the CO-OP when the roof was damaged.

2<sup>nd</sup> Road North South East of the 7<sup>th</sup> Concession:

- At the Maplefront farm one large maple tree out of a line was knocked down with the trunk being snapped about 8 ft off the ground.
- There was lots of debris as the tree was really torn apart.
- Other Maples on either side were left untouched although they were littered with debris from their neighbor.

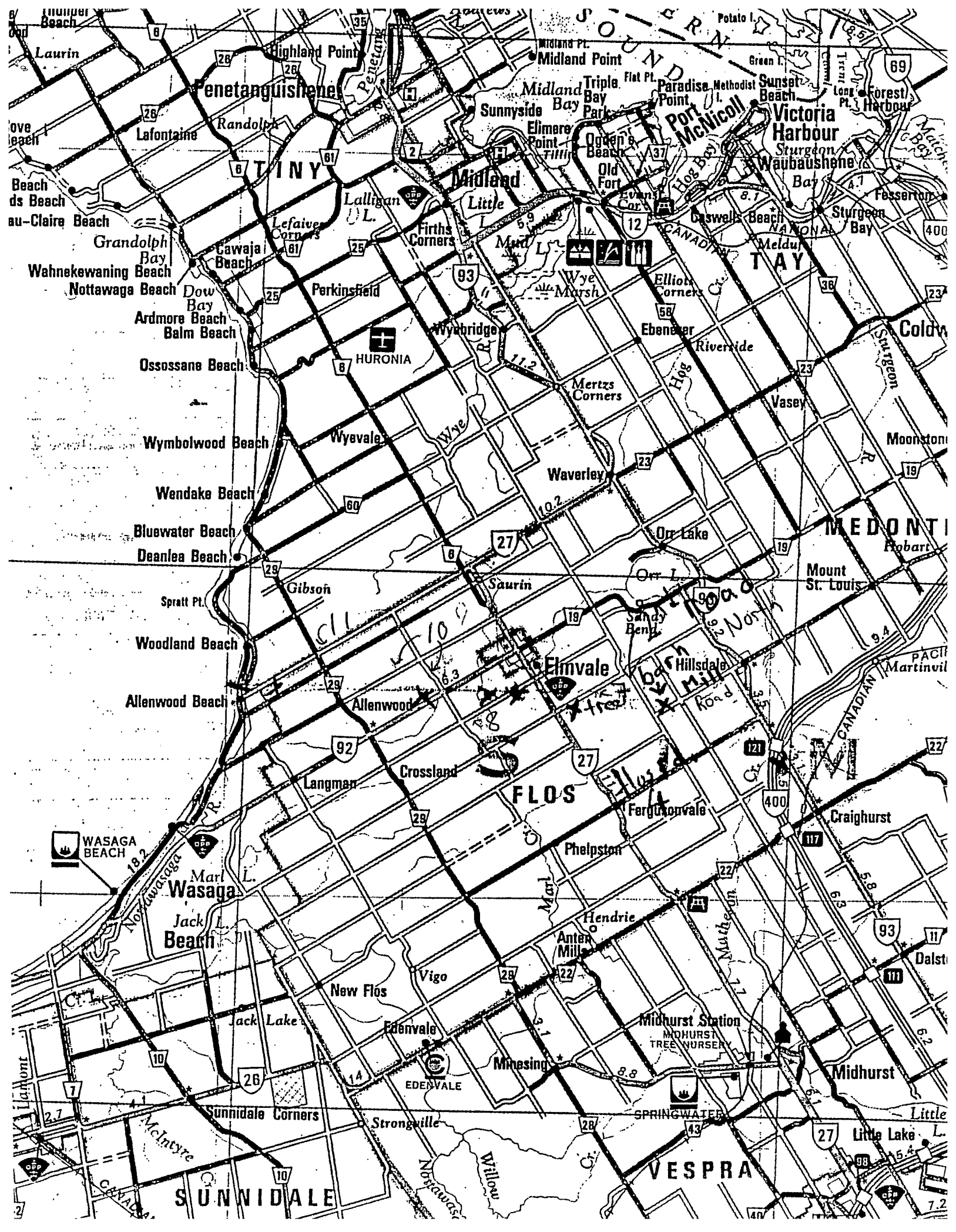
2<sup>nd</sup> Road South and Mill Road:

- About 500m away from the Maple on 2<sup>nd</sup> Road large barn had half of its roofed knocked down.

- The roof was not carried away and it was an old barn to start with but it appeared to be a newer metal roof.

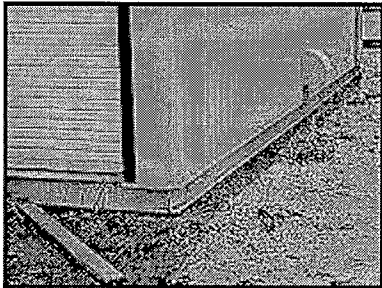
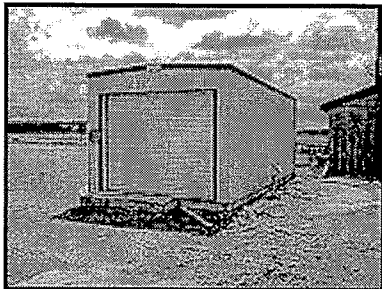
Just East of the hwy 400 and hwy 94 Interchange:

- We found more trees down in this area.
- Two large trees with 10-12" trunks were snapped right off 15-20 feet above the ground



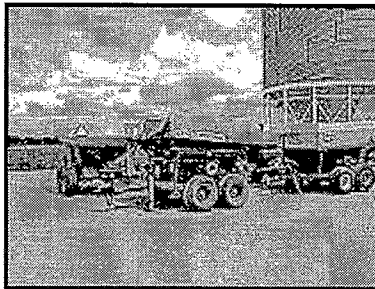
# F2 Tornado in Elmvale, Ontario on June 2<sup>nd</sup>, 1998

## Elmvale Co-op Hwy#27 & 8th Concession



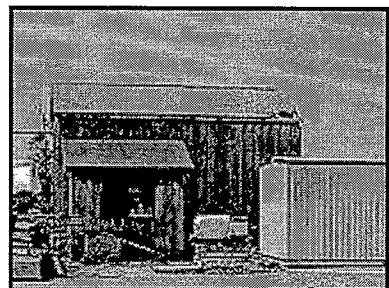
A fully loaded 15x30 ft chemical storage bldg moved 10-12" off its base.

**2nd Road South & Mill Road**



Two 5-tonne manure spreaders were tossed 250m.

**Simcoe Side Rd#11 & Cedarlane**

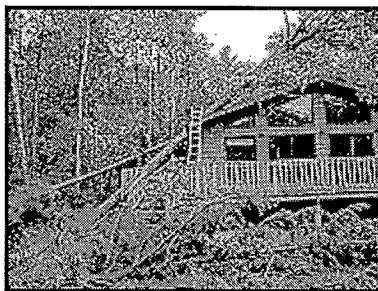


Metal roof partially removed, with a section blown 500m.

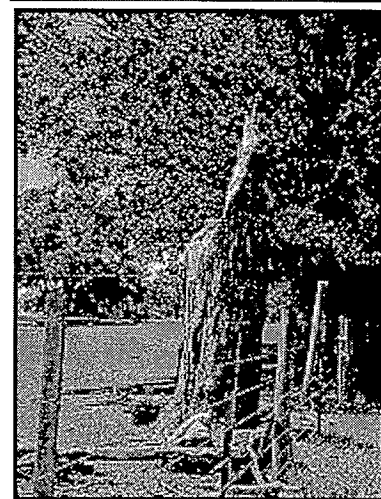
**2nd Rd North, SE of the 7th Concession**



Roof of large barn 1/2  
knocked in.



Two 12-14" maples uprooted  
& fallen on roof of cottage.



Maple tree snapped 8ft above  
the ground with debris  
scattered.

**View a written summary of the damage in the Elmvale area on June 2, 1998.**



Environment  
Canada

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Canada

**Info on designer Steven C. Wirth**

## Spotter Reports, June 2, 1998

**CLASSIFICATION:** Severe Thunderstorm **SOURCE/WATCHER ID:** EVENT TIME  
**(UTC):** 19-55 **EVENT DAY:** 2.0 **MONTH:** 6.0 **YEAR:** 1998.0 **EVENT DURATION (HR):**  
0.0 **(MIN):** 30.0 **DAY OF THE WEEK:** **EVENT LOCALE:** Elmvale, 30km N, NW of Barrie  
**ASOCTD PUBLIC RGN:** BARRIE-HURONIA **DETAILED DESCRIPTION:** "Elmvale Co-  
Op center roof partially removed. Grain elevator top taken off. Grain wagons & debris scattered.  
3ft diameter trees snapped. Fiona Barrie Fire." **INITIAL ASSESSMENT:** YES **SPL WX**  
**STATEMENT IN EFFECT ?:** UKN **STATEMENT LEAD TIME (HR): (MIN):** **WATCH**  
**IN EFFECT ?:** NO **WATCH LEAD TIME (HR): (MIN):** **WARNING IN EFFECT ?:** YES  
**WARNING LEAD TIME (HR): (MIN):** **TORNADO:** F1 **WINDSPEED:** **RAINFALL:** MM  
**RAIN DURATION:** **HAIL DIAMETER:** MM **HAIL DESCRIPTION:** **EVENT**  
**DESCRIPTION:** Tornado **Mesoscale ?:** YES **Synoptic ?:** NO **Big Event ?:** YES **Statement**  
**Est Hit/Miss:** UKN **Watch Est Hit/Miss:** NO **Warning Est Hit/Miss:** YES **Separate Event**  
**(30km/30min):** YES **Vetted by:** mjl-event warning lead >30 **Vetted date:** 06/11/98

# Summary of the Damage inflicted upon the Elmvale Area by an F2 Tornado on June 2/98.

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**Emvale CO-OP located just south of Emvale on hwy #27 and the 8<sup>th</sup> Concession. The Manager of the CO-OP showed us around and told us his story since he was inside the main building of the facility when the storm struck.**

## **Observed Damage:**

- Section of metal roof partially removed with one section blown approx. 500-600m across hwy 27.
- Small limbs (about 4-5") from trees across field were lodged into the metal siding on the wall of the main CO-OP building.
- The most prominent damage was done to the "Leg" of the silo which is some sort of loading/unloading mechanism. The steel structure was about 40-50ft tall and was knocked to the ground and bent in the middle. It was a new structure having been added only 3 months prior to the storm. The 3/4 inch stainless steel bolts that attached the leg to the silo were sheared right off.
- Just across from the silo (40-50ft away) that was damaged an older silo and loading mechanism were left untouched.
- A fully loaded 15x30 ft chemical storage building was moved 10-12 inches off its concrete slab. See photo of [Chemical Storage Building](#).
- On the other side of the CO-OP building the guide wire from the hydro poles snapped although the hydro poles were left standing. The hydro lines had grass hanging in them and there was lots of debris from trees located across the field to the west.
- Employees at the "DO-IT Building Center" across hwy 27 from the CO-OP claim to have seen the funnel cloud coming across the field, but they were not working on Wednesday.

## **Just down the 8th Concession from the CO-OP:**

- In the front yard of the home on this road there were a group of trees that were down.
- The largest of the trees had a 3ft diameter trunk and the tree was literally shredded, although the inside of the tree was rotted. Photo of [shredded tree](#).

- There was debris from the damaged trees lodged in the branches of those trees that were left untouched. The largest of these was a 5" limb that was found in another tree about 20m away from the tree it was originally connected to. Most of the smaller branches on the ground had been cleaned up prior to our visit.

### **Further South East on the 8th Concession:**

- On the East side of the road a group of about 10-12 poplar trees were down in one area.
- Trees with 5-8" trunks were snapped right off leaving many limbs suspended in surrounding trees.
- Many small branches were carried across the road by the winds.

### **Highway 92 Just West of Simcoe Side Road 10:**

- On the front lawn of a farm house there was a row of very large trees down.
- 2 large oaks and 2 maples were ripped apart scattering branches everywhere. Photo of downed trees.
- The house only 50 ft away was left untouched as were surrounding trees.
- The storm also took down a section of fence in a field to the east.

### **Simcoe Side Road 11 and Cedarlane:**

- Two 12-14" maples down on the roof of a house or cottage. See photo of trees on roof.
- The Maples were uprooted while nearby pine trees (10" trunks) were snapped right off at about 15 ft off the ground.
- On the other side of Cedarlane there were another couple of trees down.

### **Concession #7 and Highway 27 (East of the CO-OP):**

- We found more trees uprooted and some insulation caught in the wire fencing that may have been blown from the CO-OP roof when it was damaged.

### **2nd Road North, South East of the 7th Concession:**

- At the Maplefront farm one large maple tree out of line was knocked down with the trunk being snapped at about 8 feet off the ground.

- There was lots of debris as the tree was vigorously torn apart. See photo of Shredded Maple
- Other Maples on either side were left untouched although they were littered with debris from their neighbours.

### **2nd Road South and Mill Road:**

- About 500m away from the Maple of the 2nd Road, a large barn had half its roof knocked in.
- The roof was not carried away and it was an old barn to start with, however the metal roof appeared to be newer than the rest of the barn. See photo of the Convertible barn or different view of barn.

### **Just East of hwy 400 and hwy 94 Interchange:**

- We found more trees down in this area.
- Two large trees with 10-12" trunks were snapped right off 15-20 feet above the ground.

This page constructed by Chris Marshall & Steven C. Wirth.