



NVCA Flood Status Update – March 3rd 2010

This report is intended to present you with a 14 day outlook of the weather patterns for the watershed and to provide you with a summary of potential flood hazard for your municipality.

The snowfall event from February 25 to 27th significantly increased the snowpack in the watershed. The Nottawasaga Valley Conservation Authority (NVCA) has been monitoring snow depth and density within our watershed on a biweekly basis to determine potential melt water runoff. The watershed has nine snow survey sites (see figure 1).

Member Municipalities

- Adjala-Tosorontio
- Amaranth
- Barrie
- The Blue Mountains
- Bradford-West Gwillimbury
- Clearview
- Collingwood
- Essa
- Grey Highlands
- Innisfil
- Melancthon
- Mono
- Mulmur
- New Tecumseth
- Oro-Medonte
- Shelburne
- Springwater
- Wasaga Beach

Watershed Counties

- Dufferin
- Grey
- Simcoe

Within the NVCA, there are 9 snow survey sites which are monitored biweekly. At each snow survey site, snow depth and density are recorded at 10 points along a snow course. These 10 measurements are averaged out to provide a fairly accurate representation of the snow pack at that location. Snow depth is measured using a hollow, cylindrical aluminum tube with a hole on either end. This tube is inserted into the snow until it reaches the base. Markings along the sides of the tube indicate snow depth. The tube is then removed (containing a snow core) and its weight is measured to provide an accurate reading on snow density. For freshly fallen snow, a ratio of 10 to 1 is assumed between the densities of liquid water to snow. As the snow pack ripens over time, it becomes increasingly dense until it is isothermal at 0°C. This correlates with rapid snowmelt in the springtime. A snow melt runoff is forecast by establishing the statistical relationship among water equivalents, soil moisture, antecedent precipitation and stream flow. The following table should provide you with an indication of how deep the snow pack is in your area, and the sequential densities of that snow pack. For example, Edenvale Conservation Area has an approximate density of 4 to 1, meaning that 44.1 cm of snow contains 172 mm of liquid. When the snow pack reaches a density of 1 to 1, rapid snow melt occurs. The watershed snow pack presently varies between 67 mm (2.6 inches) and 24.0 cm (7.9 inches) of water. If spring rainfall is added to the potential snow melt, there is a high potential for flooding in our region.

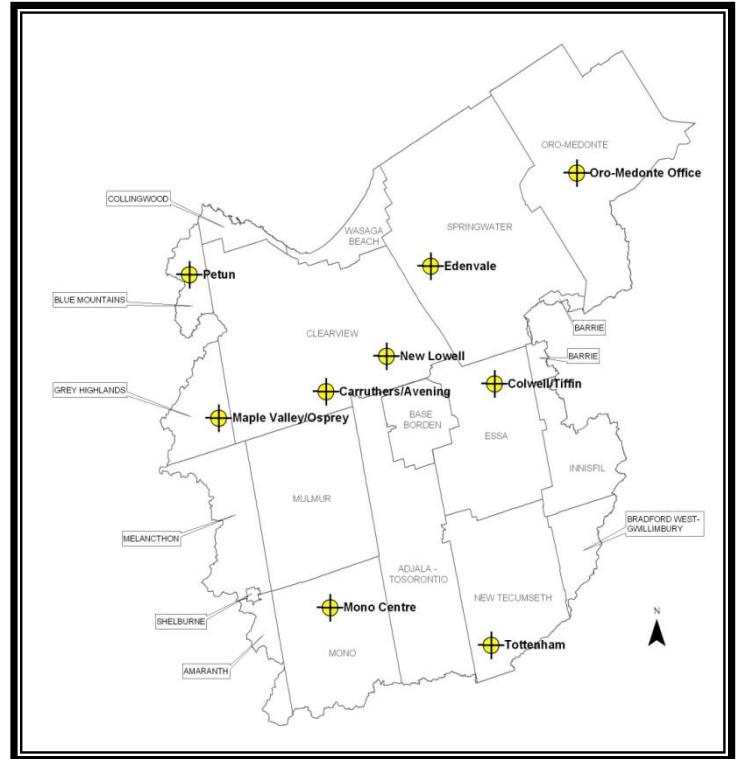


Figure 1. Location of the nine snow survey sites within the NVCA watershed.



Member of



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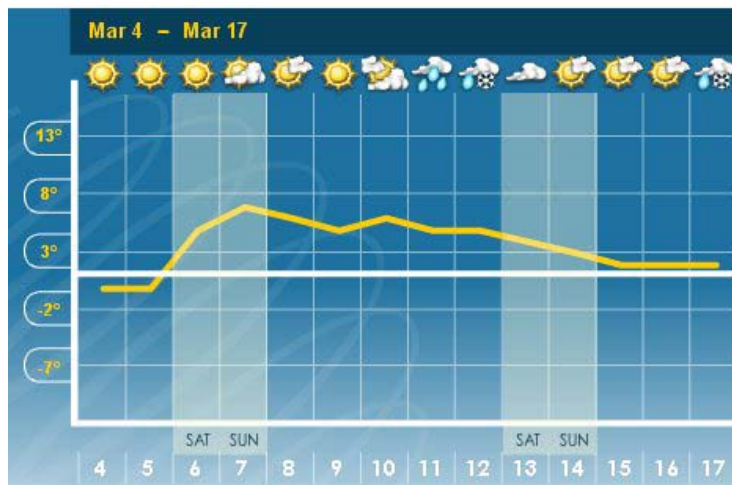
Wednesday, March 3rd, 2010

The following table has a comparison column for water equivalents for February 2, 2009. The scenario at that time resulted in a significant flood event on beginning February 12, 2009.

Table 1. Snow Survey Station –Municipal Area Affected

| STATION | REPRESENTATIVE MUNICIPALITIES | DEPTH MARCH 1, 2010 CM | WATER CONTENT MARCH 1, 2010 MM WATER | WATER CONTENT FEBRUARY 2, 2009 MM WATER |
|-------------------------|--------------------------------|---------------------------|---|--|
| Oro-Medonte Fire Office | Oro Medonte | 48.7 | 138 | 140 |
| Edenvale C.A. | Springwater | 44.1 | 172 | 114 |
| | Wasaga Beach | 44.1 | 172 | 114 |
| Petun C.A. | Blue Mountains | 77.2 | 202 | 208 |
| | Collingwood | 77.2 | 202 | 208 |
| Osprey Wetlands C.A. | Grey Highlands | 61.3 | 130 | 150 |
| | Melancthon | 61.3 | 130 | 150 |
| | Mulmur (northwestern section) | 61.3 | 130 | 150 |
| Mono Centre P.P. | Mono | 43.3 | 121 | 76 |
| | Amaranth | 43.3 | 121 | 76 |
| | Shelburne | 43.3 | 121 | 76 |
| | Adjala-Tosorontio | 43.3 | 121 | 76 |
| Tottenham C.A. | New Tecumseth | 21.2 | 67 | 85 |
| | Bradford West Gwillimbury | 21.2 | 67 | 85 |
| Colwell/Tiffin C.A. | Barrie | 38.8 | 103 | 129 |
| | Innisfil | 38.8 | 103 | 129 |
| | Essa | 38.8 | 103 | 129 |
| | Springwater (southern section) | 38.8 | 103 | 129 |
| New Lowell C.A. | Clearview (eastern section) | 36.1 | 127 | 78 |
| | Base Borden | 36.1 | 127 | 78 |
| Carruthers/Avening C.A. | Mulmur (northeastern section) | 38.7 | 114 | 112 |
| | Clearview (western section) | 38.7 | 114 | 112 |

14 Day Weather Forecast



How to read the graph:

- The white line on this graph depicts the average daytime high temperature expected for this time of the year.
- The yellow line is the forecasted daytime high.
- The weather icons along the top of the graph represent the expected sky conditions for each day.

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Figure 2. Graph depicts 14 day weather trend for Angus, ON



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14 Day Weather Forecast Observations

- Daytime highs will be above the freezing mark but will return to below freezing at night. This will cause significant ripening (consolidation) of the snow pack but should result in minimal runoff
- Current forecasts indicate general rain showers and flurries with no significant accumulation for the next 14 days, with the exception being a significant rainfall event that could occur on March 11 (Thursday)

Summary:

- Last week's snowfall has added significant content in the NVCA watershed
- The forecast calls for a significant daytime warming which will help consolidate the snow pack. Freezing temperatures at night will slow the snow melt process
- A potential rainfall event next week could have implications on this scenario
- Because of the high water content in the snow pack and the potential for much warmer temperatures and spring rains, there is a high potential for flooding
- All municipalities should continue to monitor conditions carefully
- The NVCA Status of the Watershed will be updated on March 16th, 2010

For more Information, please contact:

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