

## Report on Extreme Weather Community Presentation, March 28, 2015

We had thirty-two people from the community plus our six presenters attend our Saturday morning presentation on the effects of extreme weather and how we can be prepared. Arnold DeGraaff, chair of the environment committee gave a brief introductory context:

### Extreme Weather

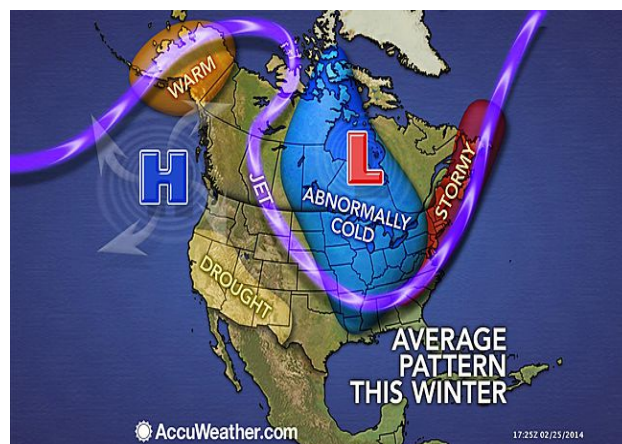
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Extreme weather doesn't happen by accident. There are reasons. I am not a meteorologist, but this is what I have been able to gather so far. **Natural Resources Canada** (1) in an extensive report (2008 and updated in 2014) gives a good overview of Canada's changing climate. It is easy to access on the internet.

The *jet stream* that pushes the weather systems across Canada has been changing. Basically it has been 'slowing down', which means that from a more regular up-and-down flow it is changing to wider and longer lasting loops, like a river that finally reaches the delta and then broadens and slows down. As a result warm tropical air masses from the south can move further north, linger longer and create heat waves and droughts. The same with regard to the polar jet stream; the cold polar air can dip deeper down into the US, creating long lasting severe cold spells and snow storms. On the edges of these large loops, in BC and the east coast, they experience the worst effects of these changes. Although the prairies too can go from more extreme long-lasting cold spells, to extensive flooding, extreme heat and droughts.

The second thing that has been changing is that the atmosphere has been heating up. (An average of  $1\frac{1}{2}$  ° C in Canada. The warming of the earth's surface and atmosphere causes more evaporation and an increase in the amount of moisture in the air. Warm air can hold more moisture, so that when it rains it can result in flash rains and floods.

This is a simplified picture but in general we can say that in the coming decades we are in for more unpredictable and extreme weather patterns, also locally. That is why we need to be prepared and do what we can to protect ourselves.



(1) Natural Resources Canada, Canada in a Changing Climate, Chapter 2: An Overview of Canada's Changing Climate, pp. 25-36.

As pointed out by Glenn Switzer of the Nottawasaga Valley Conservation Authority, we may not be prone to large events like the Red River flooding in Manitoba that have a fairly long lead time for warning the community. Rather we are more likely to have quick events that are more localized and come with little warning. Preparation is different and has its own challenges.

Listening to our presenters today did give a sense that we are well served in Dufferin County. Despite warnings from the Auditor General of Canada that many communities are ill prepared for the effects of extreme weather, as a community we can feel pretty good about the level of preparedness here. This still means ongoing work and training and particularly individual preparation on the part of citizens.

Our first presenter was Steven Murphy who is the Emergency Management Coordinator for Dufferin County. He has worked in this role in our community for five years. Prior to being here, he worked with the province. He is a wonderful, knowledgeable resource for us. He said that each season brings its potential emergencies including the effects of wind, snow and floods. Dufferin works with the Ministry of Natural Resources, five Conservation Authorities as well as all the municipalities and emergency services to provide a standardized and coordinated response. There is a Community Risk Profile on the Dufferin County website. We now have a local radio station in Orangeville, 100.5 FM which can help as well as a dedicated group of about 50 HAM radio volunteers who have worked with the county for a good 30 years. You can also sign up with Dufferin County to be emailed alerts on emergencies.

Several presenters including Steve emphasized the effects of flooding which in Dufferin can happen very quickly. The NVCA has an excellent website on which there is clear flood forecasting for our region. (References to material are appended to this report.) We were cautioned to take flood warnings seriously. Water damage to homes in Dufferin is not uncommon. There is an array of potential, interconnected consequences to flooding including deaths, injury, illness, property damage, infrastructure damage, financial implications and lingering health effects. Half of fatalities occur when people drive through floods. We were told to heed the warning, "Turn around, Don't drown". Even twelve inches of water flowing fast can grab a vehicle which then can then flip over, hit something, get stuck, whatever...it's very dangerous. The roadway could also be washed out and you cannot tell because of the water flow. Debris in flooding is another major concern so wading through flood water is not advisable. Despite all our best efforts we need to remember that water is very powerful and can get out of control quickly.

There were many, additional practical points made about flooding:

- insurance generally covers flooding from things like burst pipes (not if you've left the heat off too long during the winter)- it is important to document, including photos if possible, of damaged items in order to facilitate your claim
- damage caused by overland flooding is generally not covered in policies
- have an emergency plan (see below)
- have good drainage and grading around your house

- scan important, irreplaceables and make a digital copy – email yourself these copies and keep copies with a trusted person who doesn't live too close by
- during a flood try to turn off electricity and gas; if the water is already near the height of outlets wait for an emergency service (like a firefighter) to turn off electricity
- keep a bottle or two of bleach
- preferably know contractors in advance; have a phone list; do not trust people you don't know, for example, who come to the door asking for money in advance and for you to sign a contract; your insurance adjuster will often know reputable, approved service people
- have an emergency kit in an easy to access location (more on that later)
- plan for pets and livestock; in Dufferin County pets are welcome in shelters; livestock should not be locked in a barn, rather let them be free to find their own way which they usually do
- when there is extreme weather put on solid shoes as soon as possible; many injuries result from having feet inadequately protected
- the County has a plan for garbage collection after a flood including pick-up, recycling etc. – individual homeowners need to get it to the curb -at times insurance companies can also help with cleanup
- Dufferin County will coordinate volunteers and has a volunteer management plan
- any questions can be addressed to Steve at [smurphy@dufferincounty.ca](mailto:smurphy@dufferincounty.ca) or at 519 6991 ext. 2401.

Michael Dunmore, the Director of Public Works Mono (previously worked in Mulmur), showed us a county map that showed the large number of streams (some intermittent) and headwaters of rivers that we have. This also means maintaining many roads, water networks, culverts (about 1400 just in Mono), storm ponds and bridges. Everything has to be maintained according to minimum standards from the province. Most municipalities go way beyond this standard. The Town does constant weather monitoring, at least three times every 24 hours. They remove brush and trees (along with Hydro) so that roads are free and clear. Bridges are checked every two years. New bridges are now better designed to deal with extreme storms. The costs can range from \$500,000 to a \$1,000,000 per bridge. Culverts are inspected and ditches maintained. Culverts have been upsized as short, extreme rains are increasingly a problem. There is a beaver nuisance program. Problems with beaver dams have increased. All town staff are trained in emergency measures. At the same time Mike emphasized that it is very important for individuals to alert the town to any concerns. Generators are in all Mono facilities. Mono Community Centre and Monora Park Pavilion can act as emergency shelters. Overall, Public Works is ready. We still need to prepare ourselves individually. Resources are available and we can all work together with the municipalities for the common good.

Glenn Switzer, Director of Engineering for the Nottawasaga Valley Conservation Authority is another extremely knowledgeable resource. With each presenter it became clear what a great diversity of resources and supports there exist for the community. He reminded us that floods are very dependent on where you live. Here they are quick because we live in the Headwaters. The NVCA has many tasks including informing the county. They monitor snow for water content; have 19 water level gauges of stream flow; and 8 metrological stations of their own. They interpret, forecast and make predictions. Glenn reiterated that our weather can be very

localized so we need to also monitor the weather for ourselves. In the Headwaters region the events are smaller, faster and with little lead time. The NVCA communicates flood messages with different levels of warning. Look carefully at their excellent website. Glenn talked about dangers in the spring on riverbanks which are slippery. The water is fast moving and very cold. It can quickly become a life threatening situation so stay away. Floods can happen for many reasons: snowmelt/snowmelt plus rain; lake surge due to high winds; beaver dams; log jams (especially along highly erodible stream banks); sewer backups; poor site drainage and ice jams. He told us about an interesting phenomena in the winter where 'sticky' ice can accumulate in the bottom of a river (has happened in the Mad River), slowly grow and in effect push the volume of water out of the river to create flooding. This flooding can happen even at minus 20°C.

Representing the Insurance Bureau of Canada was Pete Karageorgos, Director of Consumer and Industry Relations. This is an association that supports insurance providers but does not regulate them. They sometimes work on the frontline, for example, with the tornado in Angus in 2014 they set up a mobile pavilion to help triage for insurance needs. They have a good website that is very informative. This includes ways to be prepared in the event of damage from extreme weather events. Many of the points Pete made are above under flooding. He emphasized the need to communicate thoroughly with your insurance provider.

The following copy of a handout gives more extensive details of sources of information, many related to the presenters who kindly shared their knowledge and expertise today.

## WHAT WE CAN DO

### 1. Make a Plan:

- to fit your unique circumstances
- use the emergency preparedness map from Dufferin County as a start for ideas

### 2. Vote for a Serious Reduction in CO<sup>2</sup>

- in this fall's federal election, check the platforms, challenge your candidates and vote for a truly healthy and livable future
- speak to your provincial representative and to your local politicians at every opportunity
- China, produces 26% of its electricity from wind; U.S. is next at 19%; Germany 12%; Canada stands at 2%. We rank at a similar level in solar, with China at the top.

### 3. Reduce our Carbon Footprint

- continue to change your habits to use resources wisely, share more, consume less
- check the following website: [www.DavidSuzuki.org](http://www.DavidSuzuki.org),

### 4. Have an Emergency Kit

- Dufferin County Emergency Measures has ideas in their literature (handed out today) and on their website: [www.dufferincounty.ca](http://www.dufferincounty.ca) and under 'residents' explore the emergency services section
- Emergency Measures Ontario has good information; Public Safety Canada has an excellent 'Emergency Preparedness Guide for people with disabilities/special needs; another detailed source is [www.theorganicprepper.ca](http://www.theorganicprepper.ca)

## 5. Communications

-see many detailed in 4.; know who still has a telephone land line near you; get a crank radio

## 6. In Power Outages

-see references in 4. above; [www.emergencymanagementontario.ca](http://www.emergencymanagementontario.ca) –look under ‘Be Prepared’  
-the Organic Prepper has a good article: “Winter Warmth When the Grid is Down”.

## 7. In Flooding

-do an internet search for the Ministry of Natural Resources, Ontario and type in ‘Floods: What you need to know’ and there is a very good PDF file you can download  
-the conservation authority has specific information: [www.nvca.on.ca](http://www.nvca.on.ca) , look under ‘Watershed Science’ and then ‘Flood Forecasting’

## 8. In Storms

-good information at [www.emergencymanagementontario.ca](http://www.emergencymanagementontario.ca) and from the US: [www.weather.gov](http://www.weather.gov)  
under: Weather Safety

## 9. Insurance

-the costs keep going up so the more we do with 2. and 3. the better  
-the Insurance Bureau of Canada has excellent information on many aspects of being prepared  
-explore their website at: [www.ibc.ca](http://www.ibc.ca).

## 10. Support Network

-we will be more resilient when we work together; see the Public Safety Canada guide on emergency preparedness for people with special needs (4.)

Arnold provided a brief concluding summary, which was also available on a handout:

## Preventative Measures

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As citizens of Dufferin County we contribute to the warming of our atmosphere in a number of significant ways. There are at least four ways that stand out:

1. *First of all*, as a commuting community, there is an exodus of cars each morning to Toronto, Brampton Mississauga and beyond and each day there is an army of trucks entering our county with just-in-time deliveries for our box stores. All these vehicles add to the increase in greenhouse gasses. Part of the solution is to develop an efficient, expanded public bus service from our area going south and a re-development of train transport to our area, as well as public support for strong emission standards and gas taxes.

2. *Secondly*, commercial, chemical, energy intensive agriculture in our region adds large amounts of CO<sup>2</sup> to the atmosphere. Part of the solution is to buy locally grown, ecologically sustainable food and support five year transition subsidies to farmers and growers to change from chemical farming to different forms of ecological farming.

3. *Thirdly*, the new suburbs, public buildings and houses developed in our area have a large carbon footprint and will emit greenhouse gasses for decades to come. Part of the solution is to support

stronger building code bylaws for new developments that are more carbon neutral and to support making financial credits available for retrofitting and insulating existing buildings.

4. *Fourth*, every day and every year some 90.000 container ships criss-cross the ocean as well as a large number of freight airplanes to deliver just-in-time “cheap” consumer goods to Walmart and the other box stores. Ecologically these are very expensive goods that we will continue to pay for in the decades to come. They are like a climate mortgage on the future of our children. Part of the solution is to buy more durable goods and lasting models and as few disposable goods as possible; re-use and re-cycle.

Presently the majority of the large government subsidies, both provincial and federal, go to transportation, agriculture and building industries (among many other ones, like mining, forestry, and fishing) that add large amounts of carbon and other gasses to the atmosphere. These on-going emissions will continue to contribute to extreme weather events.

This fall we will all have an opportunity to vote for a party that supports strong reductions in CO<sup>2</sup> emissions for Canada with clear targets. These could be announced this December in Paris and implemented by 2020 (a 20%-40% reduction) and by 2050 (an 80 % reduction). Such a vote will be a vote for our children and grandchildren.

Right now Canada’s record is deplorable. As our own Commissioner of the Environment and Sustainable Development in his 2010 report on *Adapting to Climate Change* (1) noted: The federal government has no overall strategy to deal with climate change, even though it was mandated to develop such a integrated strategy; whatever progress has been made is totally inadequate and very limited; there is no adaptation program, for example, to deal with storm surges and rising sea levels in New Brunswick; areas most at risk are Canada’s north, fisheries, forestry, ecosystems and human health. Funding to develop programs to deal with climate change has been reduced or not renewed. Current funding does not have the capacity to address the impacts of global warming. In 2014 he noted that unsatisfactory progress had been made.

Canadian representatives will not fare well at the next international climate conference this December in Paris, unless.... (1) Office of the Auditor General of Canada: 2010 Fall Report of the Commissioner of the Environment and Sustainable Development, *Adapting to Climate Change*; and the 2014 Fall Report, Chapter 1, *Mitigating Climate Change*.

Thanks to all those who participated including presenters and attendees. Our next presentation being planned by the environment committee is tentatively titled “What you need to know about GMO’s” and will be tentatively set for Saturday, November 7, 2015. We hope you can join us.

Rita Reitsma, for the Environment Committee