



FACT SHEET

CONSERVATION ONTARIO

FLOOD FORECASTING AND WARNING

Conservation Authorities, in cooperation with local municipalities and the province, play a significant role in the protection of life and property from natural hazards such as flooding. In Ontario, the Ministry of Natural Resources (OMNR), Conservation Authorities (CAs) and Environment Canada are responsible for forecasting where and when flooding is likely to occur and issuing flood alerts and warnings.

History

- The most severe flooding on record in Ontario occurred in October 1954 when Hurricane Hazel passed into southern Ontario. Eighty-one people died and damages were estimated at over \$180 million in today's dollars.
- Following the devastating impact of Hurricane Hazel, a flood forecasting and warning system was established in the province. This system is managed by a committee made up of representatives from the Ontario Ministry of Natural Resources, Conservation Authorities and Environment Canada. It monitors watershed conditions including snow conditions, precipitation and flows, as well as issues flood messages.
- As well, several flood control facilities were significantly upgraded or constructed following Hurricane Hazel. Operational practices were designed to be able to respond to immediate conditions.
- Regulations were put in place to restrict future development and inappropriate land use activities in flood hazard areas.

Flooding

- Flooding can be caused by a number of factors including extra snowmelt, irregular breakup of ice in rivers or along lakeshores or heavy rainfall. Water level surges on lakes or larger rivers can be caused by high winds.
- Areas that are vulnerable to flooding are called 'flood plains' or 'flood hazard lands'. These are lands adjoining a river, lake or other watercourse, which have been, or may be covered by floodwaters. In Ontario, flood plains are managed to protect residents from loss of life and to reduce flood damage and loss.
- Flood plains are all different. Some watercourses flood more frequently than others, some not at all. Some may take weeks to flood, others flood in a matter of hours
- If floodplains are occupied by people, there is a risk of loss of life and flood damage.

Flood Management

- **Prevention** - Informing planners and the general public about the risks of flooding will promote proper land use planning and regulation of development on flood plains thus preventing people from living and/or working on flood plains.

- **Protection** – In order to protect against flooding, CAs have constructed and maintained protective infrastructure such as dams and dykes or purchasing lands located in hazardous flooding areas. In the past, both the provincial and at the time federal governments have contributed to these projects.
- **Emergency Preparedness and Response** – It is imperative that floods are forecasted to the extent possible as well as that plans are in place to respond quickly to emergency flooding situations.

Role of Conservation Authorities in Flood Management and Forecasting

- Conservation Authorities are responsible for predicting flows and water levels within their watersheds, operating flood control structures such as dams and disseminating flood warnings to local municipalities and agencies.
- CAs work with OMNR to provide advice to municipalities for the preparation of flood contingency plans and during the response process.
- CAs and the Ontario Ministry of Natural Resources use stream gauges, weather stations, surveys of snow conditions, meteorological forecasts and computer models to determine the potential for flooding (flood forecasting).

Flood Warnings

- OMNR and CAs are responsible for forecasting where and when flooding is likely to occur and issuing flood warnings.
- Advance warning of an impending flood allows municipalities and other government agencies to put emergency response plans into operation, and if necessary, to evacuate communities.
- Advance warning notifies the public of developing or ongoing unsafe river and lake conditions and allows individuals to take precautions.
- Conservation Authorities generally issue three different types of flood warnings:
 - Flood Safety Bulletins** – provides a heads up to the public and municipalities that CAs are assessing the flood potential
 - Flood Advisory** – warning about the potential for flooding within specific watercourses or municipalities.
 - Flood Warning** – notifies that flooding is imminent or is occurring in specific watercourses or municipalities.

What If A Flood Message Is Issued For Your Area?

- Take heed of the message issued.
- Be prepared to follow the advice and instructions of emergency response authorities.

For more information on flooding, please contact your local conservation authority. A complete listing of CAs and their contact information can be found on Conservation Ontario's website: www.conservation-ontario.on.ca/profile/profile.htm.

For more information on this fact sheet please contact:
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Additional Sources of Information: Environment Canada (website), Ontario Ministry of Natural Resources (website), Provincial Flood Forecasting Committee