



Ontario's Conservation Authorities Natural Champions for Watershed Resilience

Conservation Ontario's Recommendations to Ontario's Advisory Panel on Climate Change April 2021

Conservation authorities (CAs) are local watershed management agencies that deliver services and programs to protect and manage impacts on water and other natural resources in partnership with all levels of government, landowners and many other organizations. Conservation authority watershed management programs reduce greenhouse gases and help Ontario communities build climate resilience.

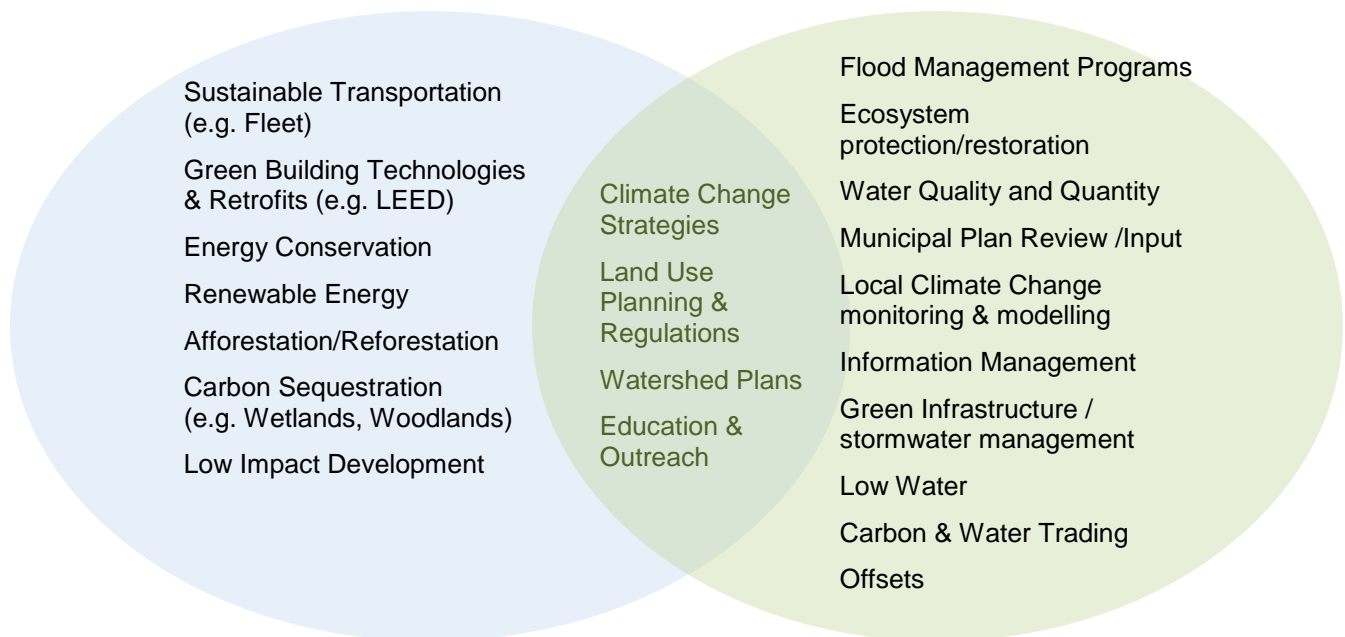
Through their various monitoring programs, conservation authorities see impacts of climate change across Ontario's watershed including:

- threats to water quality and supply,
- rising temperatures with heat waves and changing precipitation patterns and droughts,
- more frequent severe weather and rainfall events ,
- lowered river flows and warmed surface water,
- degraded biodiversity (forests, wetlands, rivers, wildlife, birds and fish), and
- public health impacts including heat stroke, water borne diseases, bacteria and virus' from mosquitos, ticks and other organisms as well as cardiovascular and respiratory illnesses from poor air quality.

Conservation authorities feel that mitigation and adaptation are critical, complementary initiatives which should be pursued together by watershed communities leading to a greener, low carbon economy supported by resilient infrastructure assets that includes a range of built (grey) and natural (green) capital.

Mitigation

Adaptation



Recommendations:

Conservation Ontario's (CO) recommendations support the Climate Advisory Panel's focus on climate resilience of Ontario communities, homes and infrastructure. CO and conservation authorities promote an implement actions through integrated watershed management.

1. The Province should advance the delivery of Ontario's Flooding Strategy in collaboration with Conservation Authorities, Municipalities and other sectors.

Conservation Ontario is pleased that the Province has launched work on Ontario's Flooding Strategy. CO and CA staff are at the Table currently working to advance a number of actions under the Flood Mapping theme. Priorities should include:

- Updating flood, erosion hazard and shoreline policies and technical guidance and including the incorporation of climate change considerations.
- Developing and implementing a multi-year strategy for the update of floodplain mapping including support for the required foundational data and technologies (LiDAR, remote sensing, base mapping).
- Continued and enhanced Provincial financial investments in conservation authorities for delivery of the hazard and erosion management program including:
 - land use planning and permitting – CA Act
 - flood forecast and warning, including watershed monitoring technologies and the update to Ontario's Flood Forecast and Warning Guidelines
 - studies, upgrades and management and of conservation authority flood infrastructure, with additional investments for small rural/northern communities.
 - implementation and management of natural infrastructure solutions for climate and flood resilience in watersheds, floodplains and shorelines that have multiple co-benefits for communities including, recreation and tourism, jobs, mental health, public safety, biodiversity, water quality and quantity benefits as well as food security.
- Finalizing the Province's Low Impact Development (LID) Guidelines and training required to advance and manage LID solutions.

2. The Province should financially support integrated watershed management approaches to climate resilience including investments in CA watershed monitoring (water quality, quantity, terrestrial/ecological) required to not only track long term trends and climate impacts but to also support evaluation of adaptive (and mitigation) actions and decisions required across all sectors.

This is to ensure we are indeed on the right track to building resilience, as well as identifying where we need to adapt or revise the actions to keep and maintain resilience. For example:

- **Watershed monitoring programs:** CAs monitor a range of surface water and groundwater quality and quantity parameters. In addition to a few dedicated climate change monitoring stations, there are also event-based monitoring stations.
- **Low Water Response Programs:** CAs collaboratively manage these local programs, issuing low water advisories to indicate the state of water resources including an impacted state where water supply fails to meet demand despite water conservation measures.

- **Water Budgets:** Models used under the *Clean Water Act, 2006* Drinking Water Source Protection (DWSP) Program for water budget studies are also being utilized for climate change modeling at some conservation authorities. Some conservation authorities use these models, in addition to various studies, in order to assess the adaptive capacity of conservation organizations to respond to the effects of climate change.
- **Watershed and subwatershed studies:** CAs examine trends in quantity and quality of water as well as the aquatic and terrestrial resources over time provide a strong basis for incorporation of climate change considerations/stressors. The Toronto Region Conservation Authority and Credit Valley Conservation, Lake Simcoe Region and others are incorporating climate change modeling studies into their watershed management plans.

3. The Province should invest in communications and outreach supporting communities and citizens understanding of their shared responsibility and actions they can take to build climate resilience.

For example the watershed monitoring information noted above is used in Conservation Authority Watershed Report cards <https://www.watershedcheckup.ca/> which are produced once every five years and this is used to help promote watershed, community and individual action for resilience.

4. The Province should engage CAs, Municipalities, Agriculture and Indigenous Communities in the Provincial Climate Vulnerability/Impact Assessment.

CAs are working internally and in collaboration with municipalities and others to develop and implement climate adaptation and mitigation plans and strategies, with local assessments of climate vulnerabilities, including community, home and infrastructure. These strategies often utilize the monitoring, modelling and CA strategies noted above. This expertise should be considered and invested in by the province in support of community resilience.

5. The Province should invest in the securement, planning and delivery of natural and built infrastructure solutions for climate change that result in many co-benefits such as flood mitigation (noted above), biodiversity, human health and quality of life improvements, recreational opportunities as well as tourism and economic benefits.

Conservation areas offer respites for many people at this time and in the future, visitors can be leveraged by nearby communities when they visit restaurants, cultural attractions or attend events. These natural areas also provide important ecological benefits which can contribute significantly to climate change adaptation or mitigation. Additional investments into both build and green infrastructure will increase the co-benefits and contribute to improved economic outcomes.

6. Working collaboratively with CAs, agricultural producers, agribusiness and other agricultural associations, the Province should continue to invest in soil health initiatives identified in Ontario's Soil Health Strategy.

Conservation Ontario represents CAs on the Province's Soil Health Strategy Soil Action Group which is currently developing an implementation plan for soil health across Ontario. Healthy soils provide the climate resilient natural infrastructure that supports food security for local, regional and national jurisdictions. Conservation authorities are working actively with agriculture organizations, OMAFRA

and others to advance Cover Crop strategies, Rural and Great Lakes water quality initiatives that also support long term food security and the agricultural economy in Ontario.

7. The Province should invest in advancing the development of the Climate Change Vulnerability Assessment Tool for Water Quality. Areas of opportunities include

- technical improvements (logic testing & scoring principles),
- improving data and accessibility (user friendly climate data portals), and
- improving user support (accessible on line interface, and links to resources and authoritative sources of data)
- broader use applications

Over the past several years, the Conservation and Source Protection Programs Branch (CSPPB), which administers Ontario's Drinking Water Source Protection program, identified the importance, and need to better incorporate potential climate change impacts into source protection planning and management. As a result, in early 2017/2018 the CSPPB/MECP, in collaboration with Conservation Ontario and the Ontario Climate Consortium, initiated a project to develop a climate change vulnerability assessment tool and guidance document.

The Climate Change Vulnerability Assessment Tool for Water Quality (with complementary guidance document and training materials) is one of the first of its kind in Ontario and serves as an important method for incorporating climate change considerations into drinking water quality as part of source protection. It aligns with relevant provincial policy and uses an indicator-based approach to estimate climate change vulnerability, based on qualitative and quantitative information. Given that the effects of climate change are currently being observed across Ontario and Canada, the Climate Change Vulnerability Assessment Tool for Water Quality is crucial to support local communities, agencies, authorities and municipalities build resilience and inform local decision makers protect drinking water sources as we move into an increasingly uncertain and variable future.

8. The Province should support investments in collaborative initiatives and shared watershed approaches for climate resilience, water and flood management capacity in Indigenous Communities, that also leads to the development of reciprocal respectful relationships including the use of Traditional Ecological Knowledge

As an example, Conservation Ontario is currently working with Indigenous Partners to identify opportunities for CAs and interested Indigenous Communities to work together to update flood mapping and implement shared watershed solutions for climate change.

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