

# Climate Change Strategy



**Otonabee**  
CONSERVATION

**Climate change refers to changes in long-term weather patterns and natural variability due to human activity. Climate change can impact natural and human systems globally and locally.**

**Otonabee Conservation's programs support the adaptation and mitigation of climate change impacts in the Otonabee Region Watershed. This Climate Change Strategy articulates Otonabee Conservation's specific actions related to climate change.**

# Introductory Message

Climate change is one of our most pressing issues. Its impacts are being felt globally due to forest fires, flooding, drought, disease, famine, and extreme weather, which have created environmental, social, economic, and public health challenges.

Locally, vulnerable populations such as seniors and those experiencing homelessness are at greater risk because of extreme temperatures, and food insecurity is becoming more prevalent as prices increase due to crop damage and the need for irrigation.

New threats such as Lyme disease are becoming more common locally and many people are looking for ways to reduce their impact to ensure a better future for generations to come.

Otonabee Conservation recognizes the importance of responding to climate change. This Climate Change Strategy is a step towards minimizing our carbon footprint and identifying tangible actions that will translate to positive results in mitigating our impact.

This Climate Change Strategy identifies the actions we will undertake, how we will track our results, and the ways we will support the community. These first steps demonstrate Otonabee Conservation's commitment to take action related to climate change, and contribute to a resilient watershed community.

## WHAT IS CLIMATE CHANGE?

**Climate** is the long-term weather pattern and typical weather conditions in a specific region over years and decades. **Weather** is the short-term atmospheric conditions experienced in a specific area over days and weeks.

Climate change is the global and regional change to long-term weather patterns, resulting from human activities that alter the atmosphere through an increase in greenhouse gases, which trap heat and reflect it back to the earth's surface causing warming.

The impacts of climate changes are the effects of changes in climate to natural and human systems. This can include flooding, drought, and alterations to normal seasonal temperatures and conditions.



### Global Context

The United Nations indicates that climate change is affecting every county in the world. These impacts include natural disasters and increasing numbers of wildfires, hurricanes, droughts, and flooding. This also includes economic impacts, changes in species distribution, and disease. Rising sea levels and extreme weather events threaten public safety and higher temperatures impact public health.

The United Nations has identified 17 Sustainable Development Goals (SDG), which are the blueprint to achieve a more sustainable future while addressing a variety of global challenges.

SDG 13 - Climate Action, was adopted as the overarching framework for this strategy, which recognizes the need to take urgent action in combating climate change and its impacts. The four goals in this climate change strategy (educate, mitigate, adapt, implement) were selected to organize Otonabee Conservation's climate actions.

It is critical to reduce the increase in average global temperatures to less than 3 degrees Celsius, as increases beyond this threshold will adversely affect every ecosystem.

Efforts to limit the global increase in temperature and reduce carbon emissions are underway, but many countries are not meeting their reduction targets.



# Local Context

A Climate Emergency was declared by the City of Peterborough in 2019, confirming that climate action is a local priority.

Efforts are underway locally to reduce carbon emissions by increasing energy efficiency, water conservation, active transportation, and carbon sequestration through tree planting. Changes to building practices and constructions materials, adoption of new technology for lighting, heating and cooling, and anti-idling signage are other tools used to reduce carbon emissions, locally.

Otonabee Conservation is committed to supporting local climate change mitigation and adaptation

efforts through involvement with several organizations and initiatives including Sustainable Peterborough and the Peterborough Green Economy Hub.

Otonabee Conservation has also been engaged in climate change related projects and actions in partnership with Peterborough Public Health, and member municipalities including the City of Peterborough.

Climate change impacts everyone, and collaboration is essential to identify actions for long term solutions. The Otonabee Region watershed is unique, and our approach to climate change adaptation and mitigation reflects this local context ensuring maximum efforts to mitigate and adapt to meet local needs.



## Water



## Flora



## Fauna



## Human

Increased number of days with over 10 mm of precipitation

Increased frequency and magnitude of storms causing flooding, erosion, damage to trees, buildings and infrastructure like power lines, culverts, and roads

Increased water temperature reducing habitat for species that require cold water, such as trout

Lower water levels causing loss of wetlands, impacting many species

Increased periods of drought causing damage to crops and resulting in higher food prices and people's wells to run dry

Increased intensity, duration and frequency of precipitation

Warmer and wetter conditions in spring and winter, but drier summers

Species surviving in areas outside their normal range such as fruit trees (peaches) and Carolinian species such as Kentucky coffee-tree that were previously unable to grow in the Peterborough area

Earlier flowering of plants such as: trembling aspen, white trillium, hepatica

Changes in average temperatures creating conditions for invasive species to thrive: purple loosestrife, phragmites, dog strangling vine, garlic mustard, round goby, Eurasian milfoil; less resources to support native species

Increased CO2 levels creating ideal conditions for nuisance species like poison ivy and ragweed to increase in size and abundance causing more allergic reactions

Northward expansion of southern species such as: giant swallowtail, northern cardinal, red-bellied woodpecker, southern flying squirrel, Virginia opossum

Decline in some species such as moose; expansion of some species northward, such as white-tailed deer

Loss of bird diversity that may result in impacts on: common loon, white-throated sparrow, yellow-bellied sapsucker, eastern towhee, wood thrush, etc.

Northward spread of ticks that can carry Lyme disease

Heat stress in animals that can cause lowered immune system resistance and increased disease

Extinction or extirpation of species (still found elsewhere but no longer found here)

More days with extreme temperatures and prolonged periods of high temperatures in the summer resulting in increased electricity use for air conditioning and causing health risks for vulnerable people and communities, including seniors

Warmer, wetter winters, with less opportunity for winter activities like skating and skiing

Later freeze-up and earlier ice-out making the season shorter for snowmobiling and ice fishing

Increased number of freeze-thaw days causing unsafe ice conditions

Increased length of growing season; higher pollen levels and longer pollen season affecting allergies

Dry conditions resulting in forest fires, and restrictions on campfires

# OTONABEE CONSERVATION CLIMATE CHANGE STRATEGY

## GOAL 1



## Educate

Increasing the watershed community's understanding of how climate change impacts the watershed's natural environment

### OBJECTIVE

**Increase the broader watershed community's understanding of the Authority's role with the climate change agenda, and the impacts to the watershed's natural environment due to climate change.**

### ACTIONS

- Adopt a climate change lens when promoting programs & services
- Include climate change related responsibilities in work plans and job descriptions
- Collaborate with others to advance climate change actions across all sectors of society
- Undertake climate change vulnerability assessments
- Utilize monitoring data to create information about climate change impacts on the watershed
- Incorporate climate change messaging into Otonabee Conservation's education programs

## GOAL 2



## Adapt

Actions taken in response to actual or projected climate change impacts, which reduce the effects of climate change on built, natural, and social systems.

### OBJECTIVE

**Reduce carbon emissions from Authority operations and increase carbon sequestration.**

### ACTIONS

- Continue to advocate for the development of floodplain mapping guidelines that include climate change considerations
- Undertake a review of all policies, strategies, and program and service descriptions to integrate and include climate adaptation
- Promote the implementation of Low Impact Development (LID) and other techniques to reduce the impacts of impervious surface areas and improve the capture of rainfall
- Support local municipalities in the incorporation of climate change considerations in official plans and other land use planning policies and documents
- Work with local municipalities to update design criteria for stormwater management facilities and infrastructure (bridges and culverts) to accommodate conveyance of runoff from storms

GOAL  
**3**



## Mitigate

Efforts to lower or prevent the release of greenhouse gas emissions into the atmosphere, including reducing sources of emissions and implementing measures that enhance the storage or sequestration of Carbon.

### OBJECTIVE

**Include climate change considerations in policy and program development and implementation; enhance local capacity to withstand the impacts of flooding from increasingly frequent and intense storm events.**

### ACTIONS

Reduce carbon emissions and fuel usage by keeping the Otonabee Conservation fleet in good running condition with regular maintenance and service

Consider electric or hybrid options when replacing vehicles

Increase use of alternatives to travel (i.e. conference calls, carpooling, telecommuting)

Undertake audits of facilities/operations and implement recommendations with new builds or when retrofitting existing infrastructure (i.e. energy audits, waste audits, ISO 14001, installation of energy efficient lighting, cooling, heating systems, windows, plumbing, etc.)

Review conservation area land management and operations through a climate change lens to implement best practices

Undertake and facilitate tree planting projects

GOAL  
**4**



## Implement

The process of putting a plan into action including a process to measure the progress of implementation, and the effectiveness of the actions to ensure the strategy is successful.

### OBJECTIVE

**Implement Climate Change Strategy and track progress.**

### ACTIONS

Establish, assess, and update our carbon impact

Measure and report our progress annually

Review Climate Change Strategy annually to ensure it remains current and relevant

# MEASURING OUR PROGRESS

Otonabee Conservation will track our actions taken to implement and achieve the goals identified in the Climate Change Strategy. We will report our progress on an annual basis, using a report card format.

A regular reporting schedule will provide opportunities to regularly review our goals and actions, as priorities may change over time. The Climate Change Strategy offers an opportunity to review and reflect on our progress, which is an essential component of reporting our progress.

Measuring our progress and reporting on our actions ensures accountability, and will provide opportunities for collaboration, discussion, and a greater awareness of local efforts being made to mitigate and adapt to changes in the Otonabee Region Watershed.

## TARGETS

### Education

Add climate change page to Otonabee Conservation Website and maintain regularly

Include climate change related info on Social Media Platforms

Model climate change actions and behaviours

Review job descriptions and amend to include climate change related responsibilities

Include climate change related activities in workplans

Be an active participant on local climate change initiatives, such as:

- Peterborough Public Health Climate Change and Health Advisory Group
- City of Peterborough Watershed Planning Study
- City of Peterborough Stormwater Management Plan
- City of Peterborough Community Climate Change Resiliency Strategy
- Green Economy Peterborough

Facilitate discussions with municipalities and others to share best practices and success stories related to implementing climate change strategies and measures to mitigate impacts

Support climate change initiatives and processes undertaken by partner municipalities

Investigate options for undertaking climate change vulnerability assessments

Continue with data collection programs  
Enhance ability to manage and share data

Identify linkages between monitoring data and climate change impacts

Incorporate climate change messaging into Envirothon, Yellow Fish Road, Spring Water Awareness Program, Discovery Days, Peterborough Children's Water Festival Activity and other experiential education programs

Develop public information products related to climate change impacts (i.e. videos about flood preparedness)

## Adaptation

Initiate policy review process to identify opportunities to integrate climate change adaptation (e.g. climate friendly procurement policy, checklist, etc.)

Initiate program/services review to identify and integrate climate change adaptation

Review Official Plan Updates, Land Use Planning policies and documents, and include climate change considerations in comments

Quantify future impacts of climate change on floodplain mapping

Investigate partnership opportunities with municipalities and other partners to implement projects designed to reduce volume of water entering watercourses and Source Water Management (SWM) facilities during rainfall events to prevent flooding

Investigate partnership opportunities with municipalities to require pre/post development water balance and site level SWM

Collaborate with municipalities to develop design criteria to capture and control specific water volume and implement through LID

Participate in development of appropriate design criteria for culverts, bridges, stormwater management ponds and other infrastructure to reflect climate change impacts from runoff and extreme weather events

Collaborate with municipalities to establish new Intensity-Duration-Frequency (IDF) curves that reflect future climate change impacts

## Mitigation

Schedule regular vehicle maintenance  
Complete repairs as required

Establish policy that vehicles can not idle for more than 1 minute (as per City of Peterborough of Idling By-Law)

Include criteria for low fuel consumption/ electric/hybrid vehicles in procurement process for new vehicles

Install electric vehicle charging stations at Administrative Office and Campgrounds

Upgrade technology to facilitate remote work and promote paperless/digital processes

Update policies to facilitate remote work/meetings

Incorporate climate change considerations into Conservation Land Management and Operating Plans

Complete energy and waste audits for operations and facilities and prioritize recommendations for implementation

Adopt energy efficient design principles for any building renovation or replacement (i.e. LEED Certification)

Ensure Conservation Area lands are actively managed to maintain a healthy forest

Implement tree planting activities

## Implementation

Report Annually

Calculate impacts of actions to quantify reduction

Complete annual review and update of Climate Change Strategy and actions

Include climate change in updated Strategic Plan

Develop targets and milestones to facilitate implementation

Calculate organizational carbon footprint



Otonabee Region Conservation Authority  
250 Milroy Drive  
Peterborough, Ontario, K9H 7M9  
[otonabeeca@otonabeeconservation.com](mailto:otonabeeca@otonabeeconservation.com) | 705.745.5791



[otonabeeconservation.com](http://otonabeeconservation.com)

   @OtonabeeC