



# Climate Change impacts and adaptation from a Conservation Authority perspective

OCCIAR, Barrie Ontario  
March 30, 2010





## The role of Conservation Authorities In a Changing Climate

- The TRCA and all CA's within the Province are watershed(s) based natural resources management agency.
- Our organizational mandate includes managing the water and natural heritage resources within its jurisdictional boundaries on behalf of the municipal and provincial levels of governments





## The role of Conservation Authorities In a Changing Climate

- The goal of the TRCA is to develop programs and policies to manage these resources in a manner which ensures the **long term** stability of the natural environment to sustain and,
- To enhance their function in providing a healthy and **sustainable** natural heritage system, while managing the risks to life and property related to natural processes such as erosion and flooding.

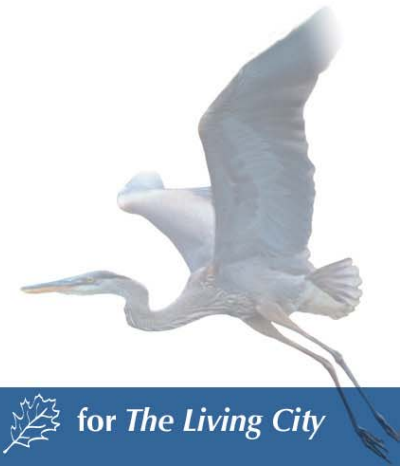
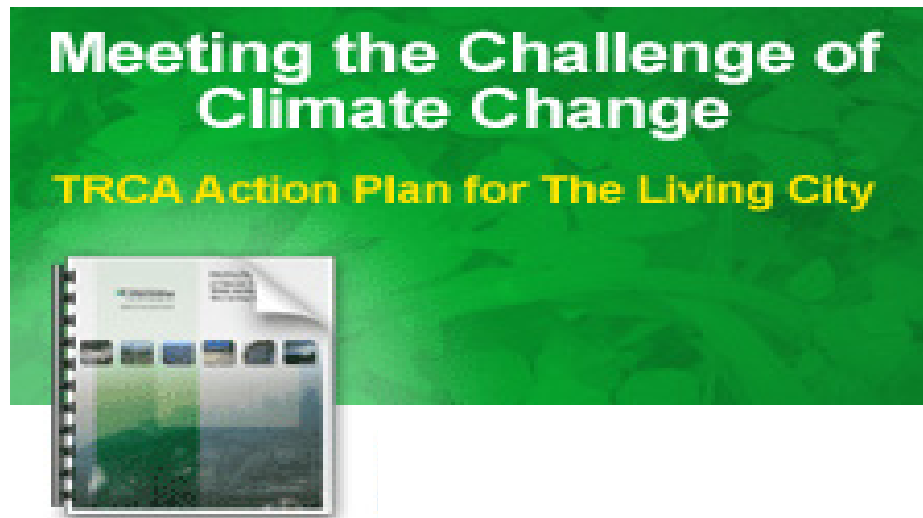




The role of Conservation Authorities In a Changing Climate

## Climate Change

Meeting the challenges of climate change will be critical in achieving a healthy, sustainable urban region extending into the 22nd century.



## Climate Related Issues

- **Natural systems are susceptible to changes brought about by land use change. The existing natural systems under TRCA management are undergoing changes related to the increasing pressures of urbanization.**
- **The addition of the stressor of climate change will serve to further influence change within our natural systems and create new or increased challenges to our management objectives.**





## The role of Conservation Authorities In a Changing Climate

### Climate Related Issues

- **While some aspects of the changing climate are relatively well documented, such as the anticipated change in mean annual temperature, some impacts have increased uncertainties.**
- **The level of uncertainty however can not be looked at as being a reason to hesitate in integrating anticipated changes into our management programs.**





## The role of Conservation Authorities In a Changing Climate

# Climate Related Issues

- Events such as the August 2005 storm serve as a reminder of what we can expect in the future from a weather perspective.

Finch Avenue Collapse, August 19, 2005





The role of Conservation Authorities In a Changing Climate

## **Climate Related Issues**

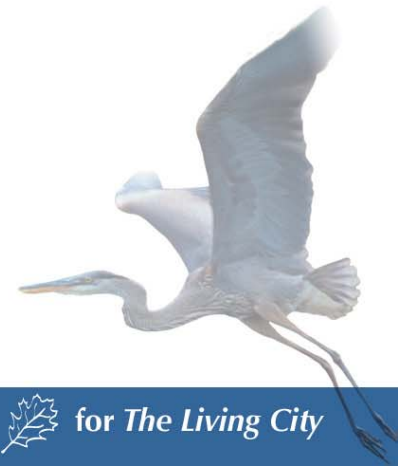
- More mid winter thaws
- A shift in Flood season now shifting from early spring to late winter ( where a season exists)
- In winter – frazil ice and more open water





The role of Conservation Authorities In a Changing Climate  
**Climate Related Issues**

- IDF curves, future changes in design storm amounts
- Increases in potential Drought



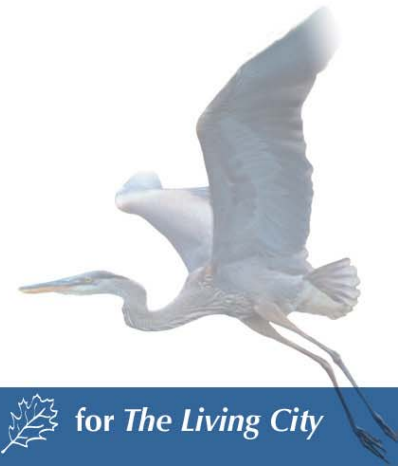


The role of Conservation Authorities In a Changing Climate  
**Climate Related Issues**



**Dog-strangling Vine Seed Pod**

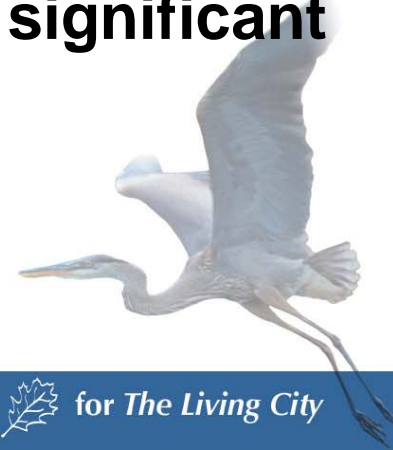
The increase in invasive plant species and wildlife into the region is also a precursor of what will continue to occur under a changing climate





## The role of Conservation Authorities In a Changing Climate

- **In Summary, Within the Watersheds of the TRCA**
  - **We are already dealing with impacts of urbanization on the ecosystem, including heat island effect, smog, urban flooding, erosion, invasive species, and impacted water quality.**
  - **The additional stress on already stressed natural systems due to Climate Change will create significant new challenges.**



## The role of Conservation Authorities In a Changing Climate

- **However, at TRCA we believe that CA's are in a unique position to be able to deal with Climate Change from both an Adaptive and Mitigation perspective.**
  - We are already in the business of managing systems which portray inherent adaptive processes ( Watershed based ecosystems)
  - we already understand the issues with multiple stressors to be able to understand and effectively manage on a watershed basis
  - To accomplish the above and look at mitigative measures, we plan on a long term and adaptive basis.

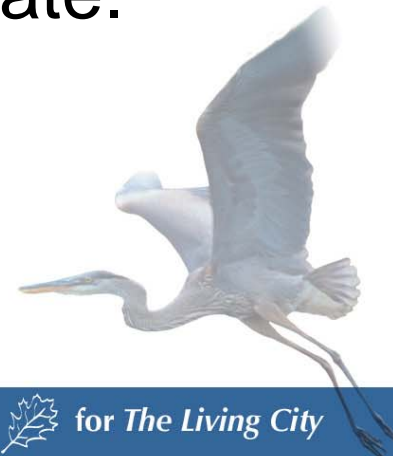




## The role of Conservation Authorities In a Changing Climate

### **C.A. Leadership in CC**

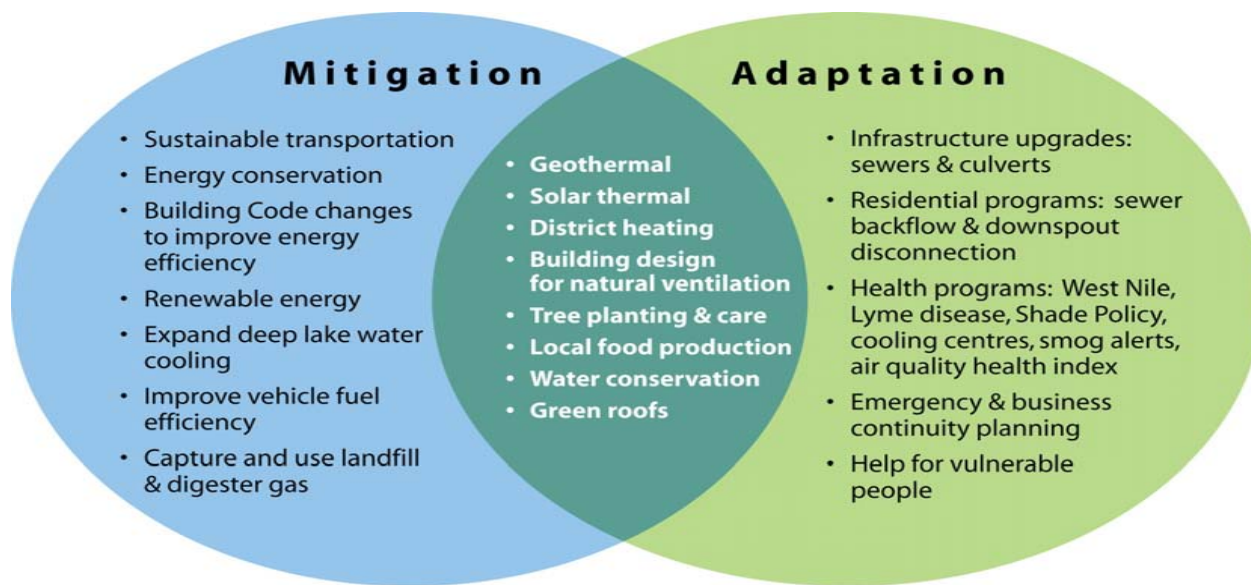
- Having these basic management principles inherent to our overall goals and objectives allows the TRCA and CA's in general to be strategically placed to provide our Clients with effective direction and input around managing watershed changes and ecosystems under the challenges that a Changing Climate will create.





## The role of Conservation Authorities In a Changing Climate

# TRCA DRAFT Climate Change Strategy



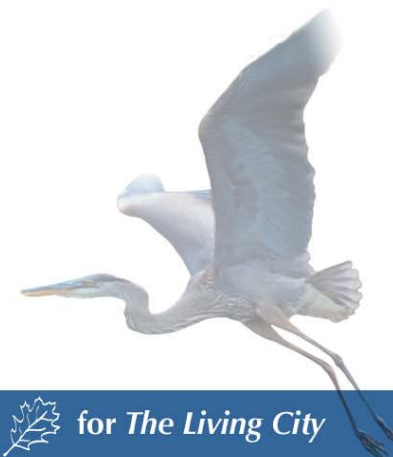
**Mitigation:** the globally responsible thing to do

Actions that reduce the emissions that contribute to climate change.



**Adaptation:** the locally responsible thing to do

Actions that minimize or prevent the negative impacts of climate change.





## The role of Conservation Authorities In a Changing Climate

- To Integrate CC into the business of the TRCA, and provide direction to our municipal clients, our strategy will include:
  - developing and maintaining a knowledge base of climate change issues,
  - creating a process which fits into our existing business framework, and
  - creating a process to pass along this knowledge to our clients
  - Creation of partnerships with Public and Private sectors to accelerate implementation





## The role of Conservation Authorities In a Changing Climate

- develop and maintaining a knowledge base of climate change science and issues,
  - Identify Key staff with existing Climate Change knowledge,
  - Create an internal CC working group,
  - Develop and maintain Partnerships with external experts and agencies





## The role of Conservation Authorities In a Changing Climate

- Create a process which fits into our existing business framework
  - Utilize the Watershed and Waterfront Planning Process
  - Climate Change is simply an additional stressor
  - Develop in consultation with our municipal partners modified existing or new management strategies



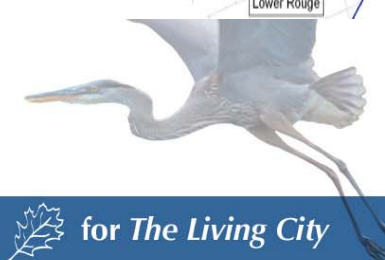
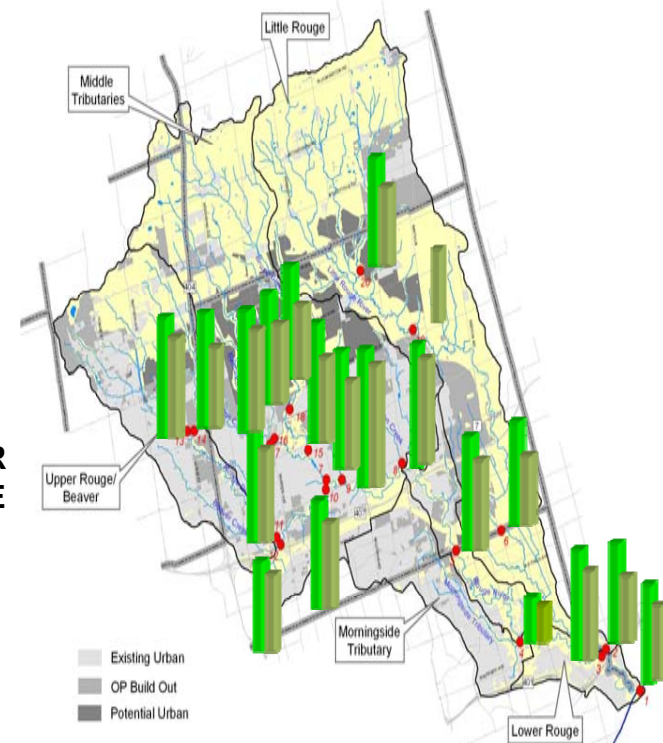
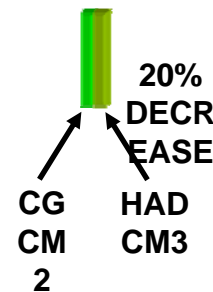


## The role of Conservation Authorities In a Changing Climate

# CA Climate Change Work

In addition to the TRCA, CA's such as the Upper Thames, Grand, Credit, and the Mississippi are all involved in assessing climate impacts on their watersheds.

The intent of which is to begin to develop comprehensive Climate Change Strategies to be in a position to adapt to a changing climate.





# WE NEED TO CONTINUE TO ADAPT TO CLIMATE CHANGE





# QUESTIONS

<http://www.trca.on.ca/understand/climate-change/>

<http://www.nvca.on.ca/index.htm>

<http://www.lsrca.on.ca/>

