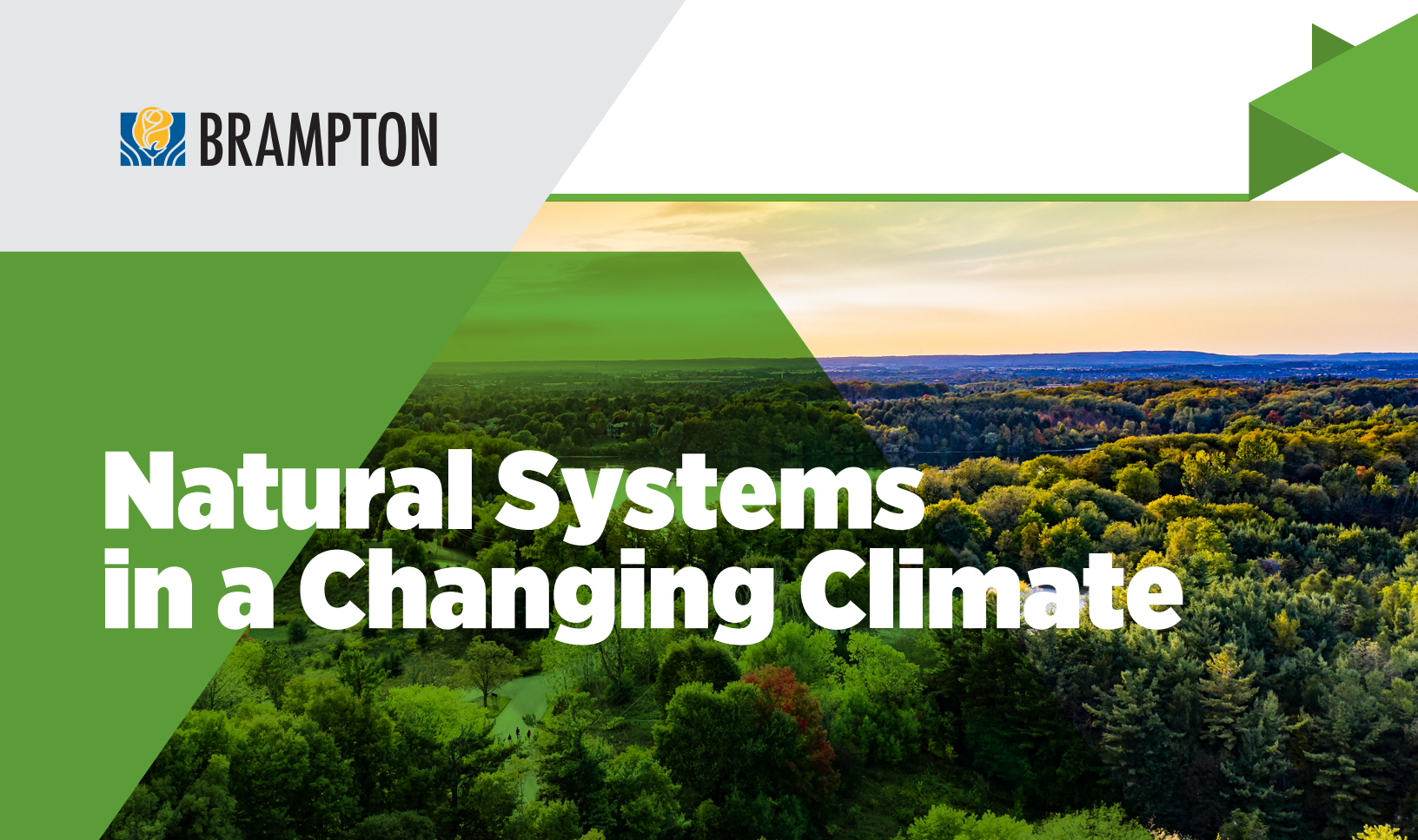




Natural Systems in a Changing Climate

How Does Climate Change Affect Natural Systems?

- Warming temperatures can lead to more frequent and intense heatwaves, causing stress to natural systems
- Increased precipitation along with more frequent and intense rainfall can increase the risk of flooding, causing erosion and sedimentation and degrading water quality

By 2070, Brampton is expected to see:

Plant and animal impacts such as:

- Stress on native plants and animals, making them more vulnerable to disease and invasive species
- Changes to the distribution of plants and animals, forcing species to move northward, leading to habitat loss
- Changes in timing of plant growing season. For example, flowers may bloom before insect pollinators have emerged

Aquatic impacts such as:

- Increased runoff to rivers, wetlands, and lakes, leading to degraded water quality
- Warming stream temperatures, making these habitats unsuitable for certain aquatic species (e.g., Cold-adapted fish species such as Brook Trout may leave areas as temperatures continue to warm).

Community impacts such as:

- Loss of tree canopy, resulting in less shade and areas for respite during extreme heat events
- Degraded water and air quality leading to public health concerns such as the risk of algal blooms and water-borne pathogens (e.g., E. coli), and heat strokes during extreme heat events
- Damage to infrastructure through extreme weather events such as trees knocking down power lines

What can we do?

Efforts across government, community organizations, and residents will be essential for implementing adaptive management strategies and preserving the city's natural heritage.

Protecting our natural systems from climate change can include adaptation actions such as:

- habitat restoration,
- invasive species management,
- tree planting, and
- Community stewardship and involvement in habitat preservation.

Nature-Based Solutions and Landscapes



Community Open Spaces

Landscapes for recreation, social life, and small-scale food cultivation

- Playgrounds
- Parks
- Sports fields
- Recreation centers
- Trails / greenways
- Urban gardens



Ecological Landscapes

Natural Systems that provide habitat and other environmental benefits

- Nature parks
- Rapid reforestation
- Successional road
- Roads to rivers
- Woodlands
- Wetlands
- Valleylands
- Lakes
- Watercourses
- Meadows



Blue + Green Infrastructures

Landscapes that capture stormwater and clean air

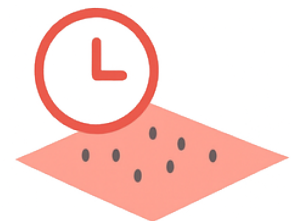
- Large lake
- Smaller retention pond
- Infiltration park
- Swales + infiltration medians
- Green roofs
- Rain gardens
- Bioswales
- Permeable pavement



Working + Productive Landscapes

Landscapes that generate new knowledge, grow energy and food, and create new urban experiences

- Urban farm
- Aquaculture and hydroponics
- Algae-culture
- Homesteads
- Campgrounds



Transitional Landscapes

Temporary landscapes that clean soil and enable new forms of social life and creative displays

- Remediation fields or forests
- Urban meadows

Source: Uneven Earth, 2015