

An aerial photograph of a suburban neighborhood. On the left, there are rows of houses with dark roofs. A large, irregularly shaped pond is in the center-right, surrounded by green grass and trees. A winding stream flows through the lower part of the image, passing between residential areas. The sky is not visible, and the overall scene is bright and clear.

# ECS Lunch and Learn

*Supporting internal knowledge transfer within TRCA*

October 26, 2021

An aerial photograph of the Carruthers Creek Watershed. The image shows a residential neighborhood with many houses and trees, situated along a winding creek. The creek flows from the top left towards the bottom right, where it meets a larger body of water, likely a lake. The shoreline is sandy and lined with trees. The overall scene is lush and green, indicating a healthy watershed.

# Carruthers Creek Watershed Plan

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**Lunch and Learn – October 26, 2021**

Presented by:

Tony Morris, Senior Project Manager

Liz Speller, Project Manager

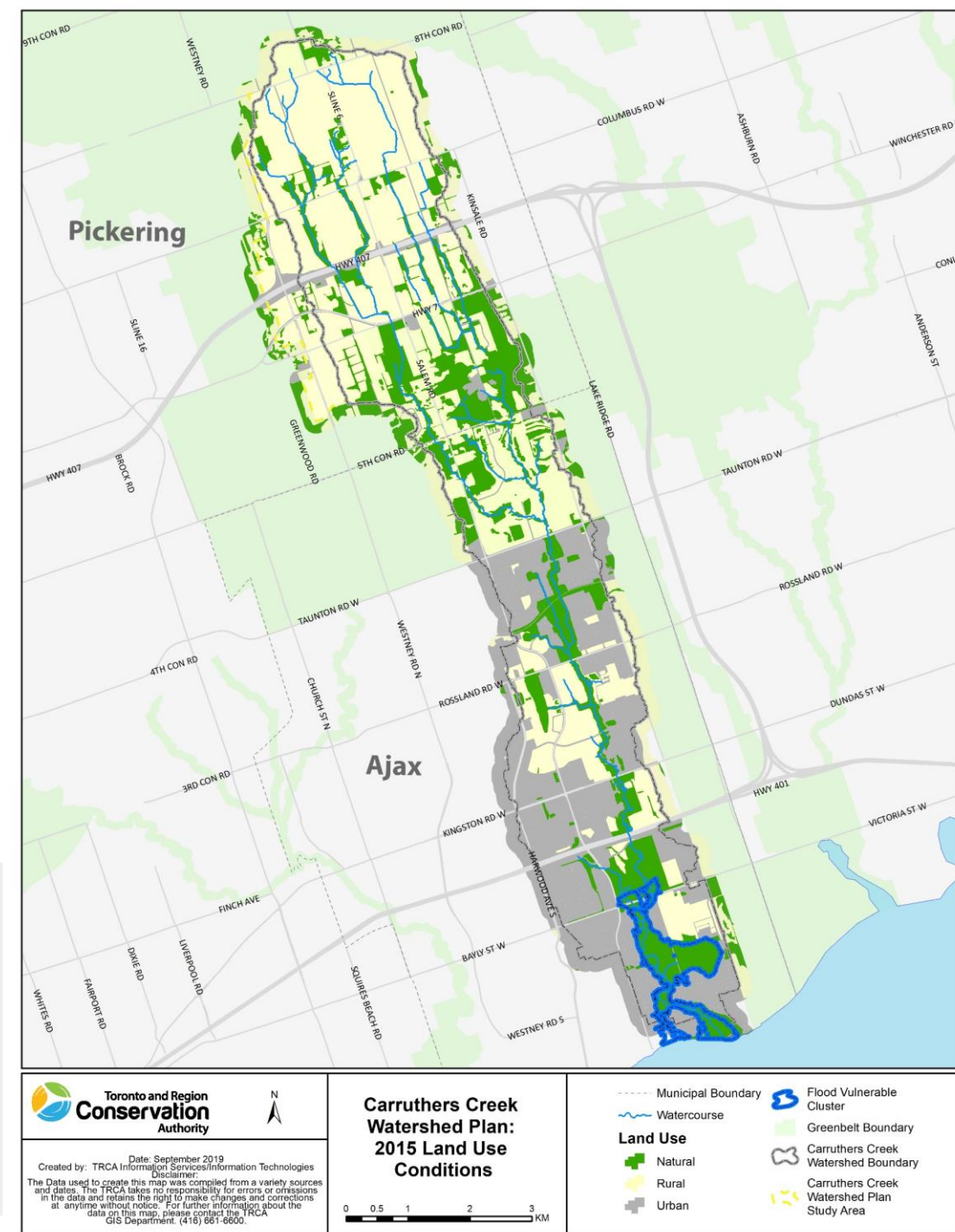
Watershed Planning and Reporting

# Background and Purpose

- Project initiated in late 2015 through Service Agreement with Region of Durham.
- **Phase 1** (2015-2017): Technical studies and assessments.
- **Phase 2** (2018-2021): Further technical studies and assessments, scenario modelling, extensive consultation, writing the Watershed Plan.
- Endorsed by Regional Council in June and approved by TRCA Board in September!

## VISION

Carruthers Creek watershed is a healthy and resilient natural system that is managed through partnerships to balance resource protection with human activity. Sound science and best management practices will protect and restore ecosystem functions, protect watershed residents from natural hazards like flooding, and maintain our natural heritage and water resources for present and future generations.



# Public Review of Draft CCWP

- Two virtual open houses were held in February 2021 attended by a total of 134 individuals.
- A total of 27 submissions were received during the public comment period:
  - 19 using the online comment form
  - 6 direct email / letter submissions
  - 2 municipal Committee Reports (Pickering and Ajax)
- A further 182 email submissions were provided to the Region of Durham via an Environmental Defence email campaign.

# Public Review of Draft CCWP – Comment Themes

Theme	How were they addressed?
Existing and Future Flooding Issues	<ul style="list-style-type: none"><li>• Additional explanation of Regional Storm and 5-year storm.</li><li>• Flood mitigation solutions will depend on future land use decisions.</li><li>• Downstream flood impacts could be managed with regional flood controls.</li></ul>
Enhanced Natural Heritage System	<ul style="list-style-type: none"><li>• Supported by the latest science and consistent with federal and TRCA guidance.</li><li>• Consistent with provincial policies related to NHS planning.</li><li>• Management recommendations have been updated to clarify process for Region of Durham and lower-tier municipalities.</li></ul>

# Public Review of Draft CCWP – Comment Themes Continued

Theme	How were they addressed?
Scenario Modelling	<ul style="list-style-type: none"><li>• Potential mitigation strategies would be developed at appropriate planning stage.</li><li>• The summary of implications in subsection 4.3 was updated to clarify implications of each scenario and how this relates to the management framework.</li></ul>
Potential Settlement Area Boundary Expansion	<ul style="list-style-type: none"><li>• The watershed plan does not make land use decisions.</li><li>• Subsection 5.4 contains management recommendations that would apply in the event of a Settlement Area Boundary Expansion in the headwaters of Carruthers Creek.</li></ul>

# Plan Organization

- The draft Carruthers Creek Watershed Plan is divided into nine sections:

	Section	Description
1	Introduction and Background	Overview of rationale and policy basis for watershed planning, the local context and considerations and key partners and stakeholders.
2	Water Resource and Natural Heritage Systems	Describes the key components of the Water Resource System and Natural Heritage System, including a description of how each system was delineated.
3	Existing Watershed Conditions	Also known as watershed characterization, describes the current conditions of the watershed organized into four themes: the Water Resource System, Natural Heritage System, Water Quality and Natural Hazards.
4	Future Watershed Conditions	Describes the three future land use scenarios that were modelled to predict the response of the watershed and associated implications.
5	Management Framework	Outlines what needs to be done to protect, enhance and restore the watershed’s health. Organized into goals, objectives, indicators and management recommendations.
6	Monitoring and Evaluation	Describes the monitoring program that will evaluate implementation progress.
7 - 9	Maps, Glossary and References	Contain supporting resources.

# Section 3: Existing Watershed Conditions

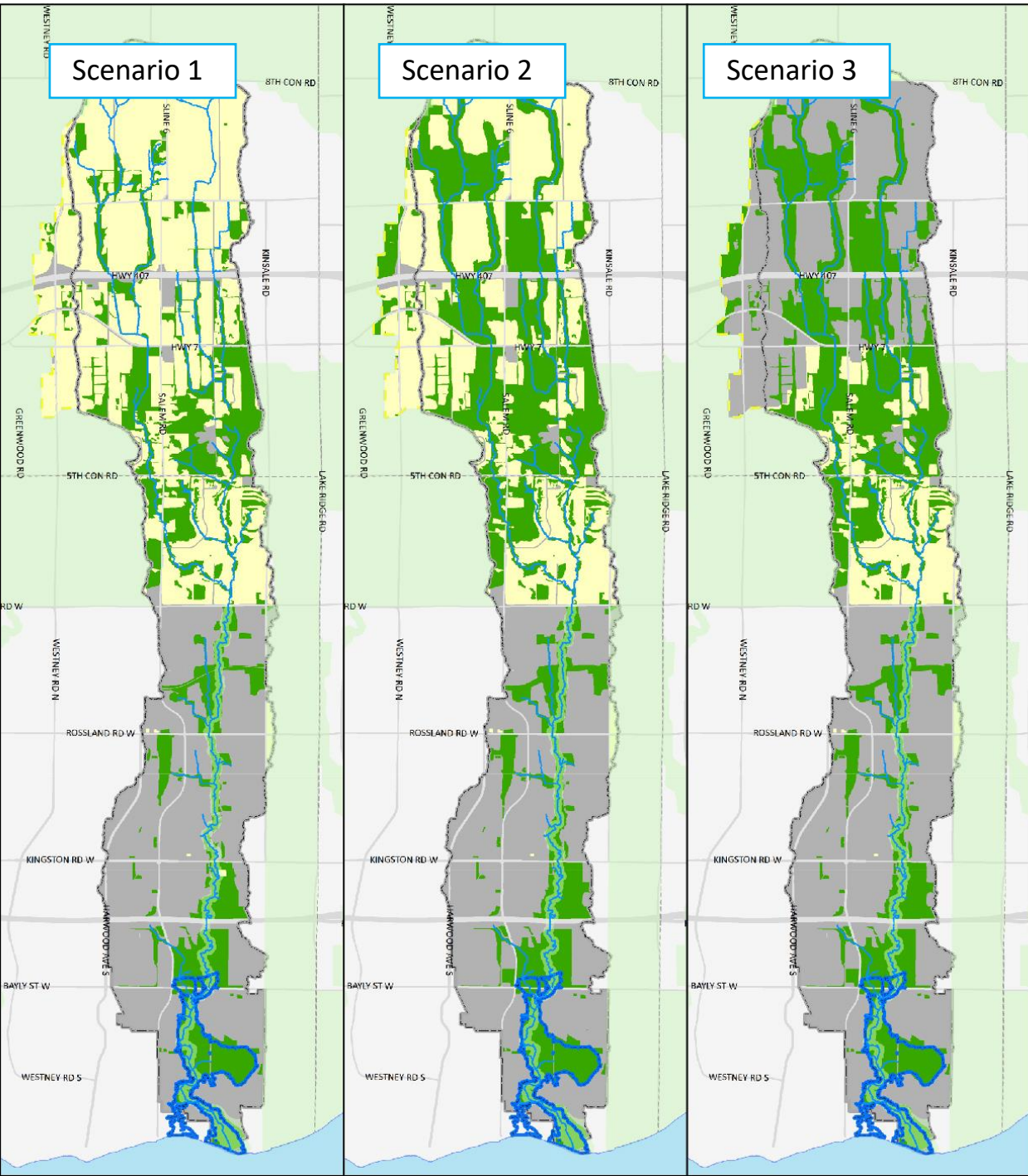
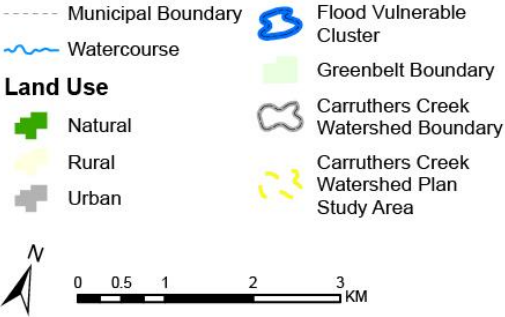
- Based on the technical assessments completed by TRCA, there are four key issues in the watershed:

Key Issue	Description
Water Resource System	The aquatic ecosystem is sensitive and near the level of land use development it can sustain long-term (without additional and improved mitigation).
Natural Heritage System	There is not enough natural cover, or good quality habitat, needed to maintain ecosystem resilience (i.e. capacity to respond to change) due to changing land use patterns and climate change.
Water Quality	Is impaired within the watershed, requiring improvements to stormwater management.
Natural Hazards	The flow of water through the watershed is out of balance and there are flooding and erosion issues.















# Section 4: Future Watershed Conditions

Scenario	Description
Scenario 1 (+ Official Plan)	Assumes all lands south of the Greenbelt are developed up to 2031 approved Official Plans.
Scenario 2 (+NHS)	Assumes same development as Scenario 1, but includes the enhanced Natural Heritage System (NHS).
Scenario 3 (+Potential Urban)	Assumes post-2031 development in the headwaters of Carruthers Creek, outside the enhanced NHS.



Section 4: Future Watershed Conditions

		Scenario 1 (+OP)  (Compared to Current Conditions)	Scenario 2 (+NHS)  (Compared to Scenario 1)	Scenario 3 (+ Potential Urban)  (Compared to Scenario 1)
Water Resource System	% change	 -6%	 +1%	 -12%
Natural Heritage System	% change	 0%	 +7%	 +6%
Water Quality	% change	It is difficult to draw a conclusion on the percent change for water quality solely.		
Natural Hazards	% change (Taunton Rd.)	 +2%	 +2%	 -113%
	% change (Shoal Point Rd.)	 -6%	 +2%	 -41%

Legend
<b>Green Up Arrow: &gt;+5% change</b> Watershed conditions improve
<b>Equal Sign: 0 to +5% or 0 to -5% change</b> Watershed conditions stay roughly the same
<b>Yellow Down Arrow: -6% to -10% change</b> Watershed conditions deteriorate
<b>Purple Down Arrow: &gt;-10% change</b> Watershed conditions significantly deteriorate

# Section 5: Management Framework

## GOAL 1

### Land Use

Achieve sustainable land use and infrastructure development patterns to protect, enhance and restore water quality and maintain stable water balance.



### OBJECTIVE 1

Minimize the impacts of land uses through sustainability policies and the use of low impact development and green infrastructure.

#### Indicators:

Report on implementation of sustainable development policies/standards

### OBJECTIVE 3

Manage the risks of natural hazards through appropriate mitigation measures and restoration.

#### Indicators:

Reduce number of flood vulnerable structures and roads

### OBJECTIVE 2

Install and upgrade stormwater infrastructure using best available technologies to reduce runoff; resulting in improved water balance and water quality.

#### Indicators:

Report on the status of stormwater management

### OBJECTIVE 4

Encourage the use of agricultural best management practices to minimize agricultural runoff and improve rural land stewardship.

#### Indicators:

Work with the agricultural community to track implementation of best management practices

## GOAL 2

### Water Resource System

Protect, enhance and restore the areas and features that make up the Water Resource System (including aquatic habitat) for ecosystem resilience and sustainability.



### OBJECTIVE 1

Implement appropriate policies and programs that protect, enhance and restore the areas and features that comprise the Water Resource System.

#### Indicator:

Appropriate policy designations are in place for the Water Resource System

### OBJECTIVE 2

Promote aquatic habitat connectivity to facilitate native fish movement throughout the watershed.

#### Indicator:

Maintain, or improve, aquatic health rankings

## GOAL 3

### Natural Heritage System

Protect, enhance and restore the Natural Heritage System and urban forest within the watershed to improve ecosystem resilience and sustainability.



### OBJECTIVE 1

Improve the quality and quantity of the Natural Heritage System across the watershed through ecosystem protection, enhancement and restoration, and implementation of relevant policies.

#### Indicators:

Increase total natural cover in the watershed

Appropriate policy designations are in place for the Natural Heritage System

### OBJECTIVE 2

Ensure habitat exists for native terrestrial species to thrive throughout the watershed.

#### Indicators:

Maintain, or increase, the number and area of species and vegetation communities of concern

### OBJECTIVE 3

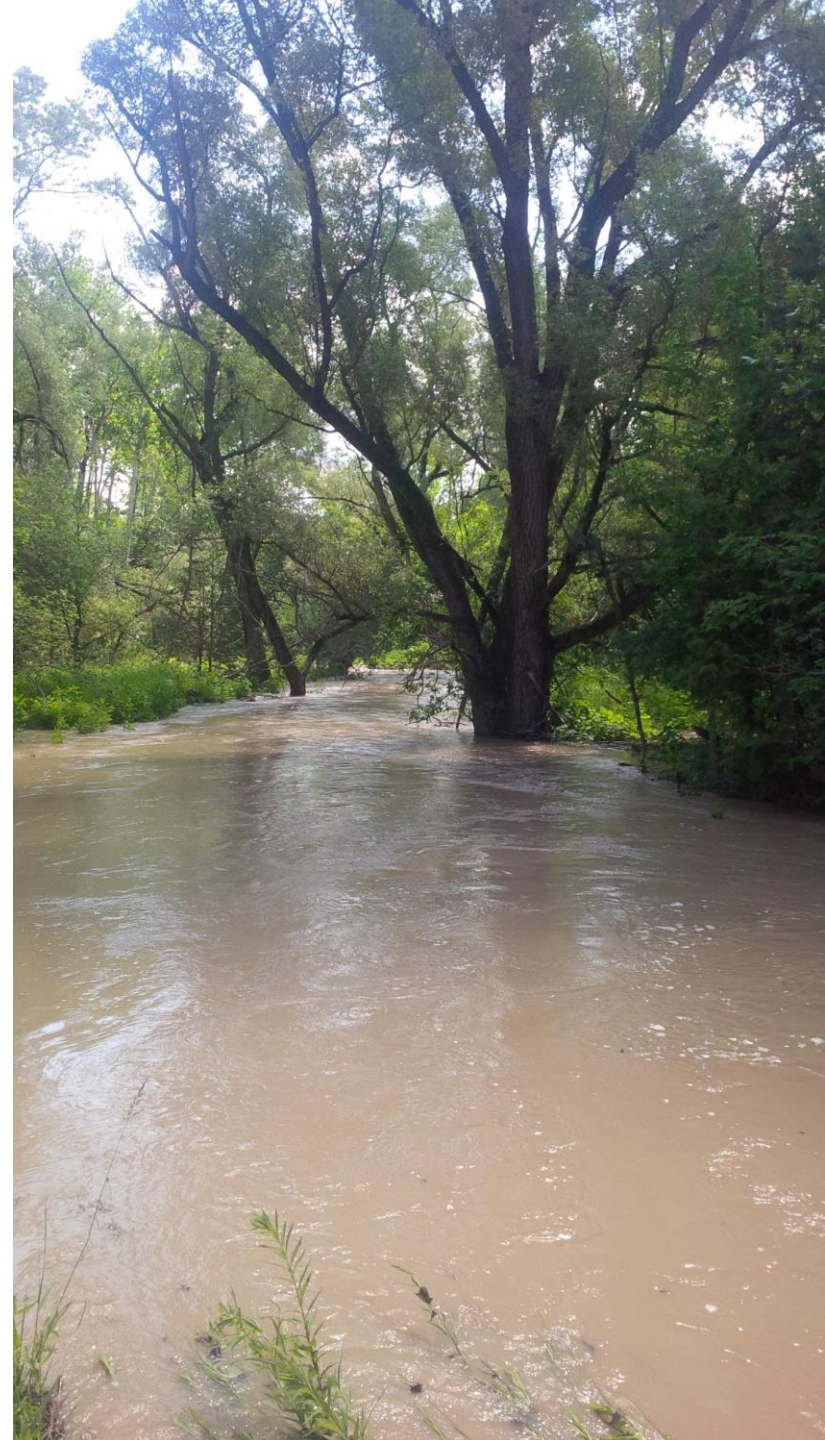
Increase the urban forest cover within the developed portion of the watershed to improve social and environmental well-being.

#### Indicator:

Increase total tree canopy in the watershed

# Plan Implementation

- Management recommendations identify responsible parties:
  - TRCA
  - Region of Durham
  - Lower-tiers (Ajax and/or Pickering)
  - Or a combination of the above parties
- This is a 10-year Watershed Plan and will require collaboration and long-term commitment from TRCA and our municipal partners.



# Planned/Potential 2022 Projects - Restoration

Project Idea	Description	Link to CCWP
Priority Restoration Areas	Carry out restoration work targeting the three priority restoration areas identified south of Taunton Road.	Management Recommendations: 1.3.1, 2.1.3, 3.1.3 and 3.2.2 (Map 4 in CCWP).
Priority Securement Areas	Secure sites south of Taunton Road to increase public land ownership and connectivity.	Management recommendation: 3.1.4 (Map 6 in CCWP).
Carruthers Marsh SAR	SAR opportunity to focus on Eastern Pond Mussel.	Management Recommendations: 2.1.3 and 2.2.2.
Priority Barrier Removal	Small weir removal project. Focus on Redside Dace reaches.	Management Recommendation: 2.2.1.
Durham 5 Tree Planting Agreement	MOU to increase tree planting in Durham Region as a climate solution. On private and public lands.	Management Recommendations: 1.1.7 and 3.3.2 (Map 8 in CCWP).



# Planned/Potential 2022 Projects – Outreach and Stewardship

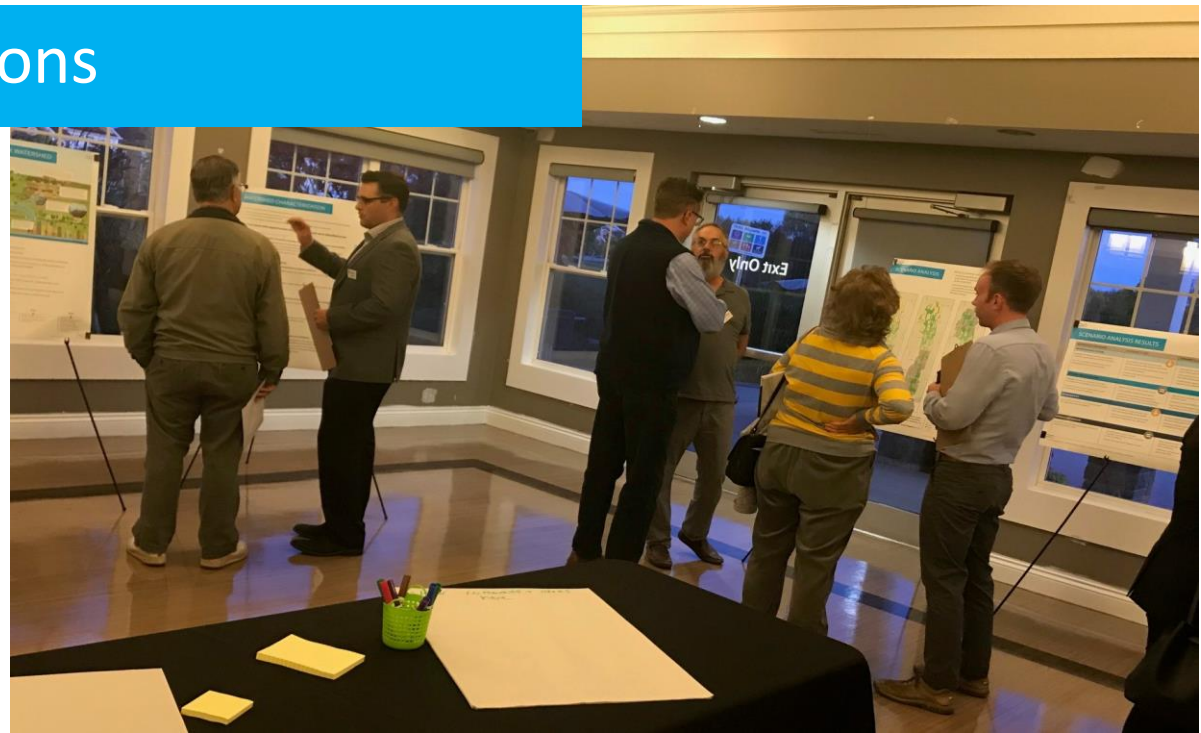
Project Idea	Description	Link to CCWP
Town of Ajax SNAP	Currently confirming neighbourhood selection and funding.	Management Recommendations: 1.1.6 and 1.1.7.
Rain to Runoff Program	Virtual “at-home” webinar program focused on salt management.	Management Recommendation: 1.1.6.
Greening Your Grounds Program	Virtual lot level SWM webinar / workshop for homeowners.	Management Recommendation: 1.3.4.
Community Planting	Organize and deliver community planting events.	Management Recommendations: 1.1.7 and 3.1.3.
Meadow Planting	Organize and deliver public meadow habitat planting.	Management Recommendation: 3.2.2 (Map 4 in CCWP).
Trail Walks and Maintenance	Organize and deliver trail walks and discuss importance of proper trail use and the NHS. Organize trail maintenance with Conservation Youth Corps group.	Management Recommendation: 3.1.6.
Invasive Species Management	Organize and deliver invasive species removal (garlic mustard or phragmites). Virtual invasive species webinar.	Management Recommendation: 3.2.1.

# Next Steps - Implementation

- **Any projects or initiatives planned in the Carruthers Creek watershed for 2022 let us know!**
- Establish an Implementation Steering Committee (i.e. TRCA and municipal partners) and Stakeholder Advisory Committee.
- WPR staff will work across TRCA divisions to identify implementation opportunities and begin tracking activities for public reporting (i.e. via increasing the functionality of the Reporting Hub).
- Ensuring prioritization of CCWP implementation activities and adequate funding for future budgets (by TRCA and municipal partners) will be key for successful implementation.



# Questions



# Upcoming ECS Lunch and Learns!

Thursday, November 25  
11:00am-12:00pm

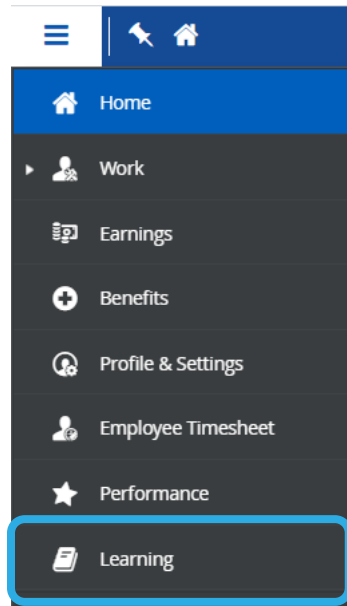
**National Issues Report  
(2021): Water Resources**


By Guest Speakers

December - TBD

**TRCA's Ecosystem  
Compensation Program**

# Learning Management System



 Course Catalog

CATEGORIES


FILTERS

Lunch and Learn

X

Q

4 items




New

Lunch and Learn: Teams, OneDrive and SharePoint

EN

Webinar




New

Lunch and Learn: Hobbies for Mental and Physical Health (Please read...

EN

ILT (Instructor-Led Training)




New

Lunch and Learn: Thermal Imaging for Restoration and Conservation

ENROLLED  
EN

Webinar



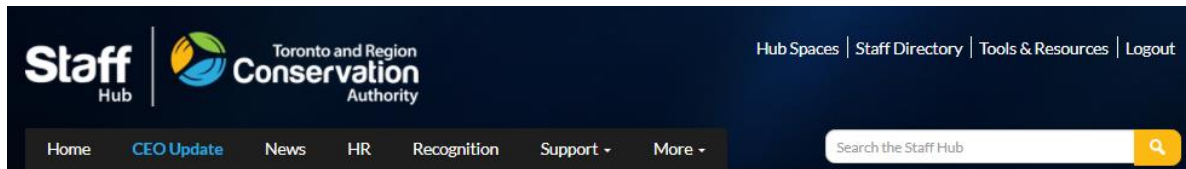
New

Lunch and Learn: Natural Heritage System Update

ENROLLED  
EN

Webinar

# Scientific Knowledge Sharing Hub



[Home](#) > [Scientific Knowledge Sharing](#)

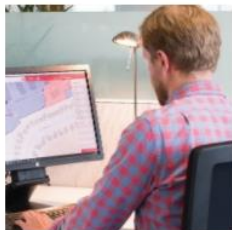
## Scientific Knowledge Sharing

Evidence-based decision making is at the core of what TRCA does. Several of our Business Units engage in generating new scientific knowledge to support watershed management actions and decisions.

It is critical that the knowledge generated is effectively shared.

The Scientific Knowledge Sharing platform is dedicated to sharing the latest scientific knowledge generated by TRCA and our partners. It is a place where staff can learn about and engage in the scientific work TRCA is undertaking.

**PLEASE NOTE:** There are several TRCA teams engaged in generating new scientific knowledge. Currently the content on the platform is specific to the Watershed Planning and Ecosystem Science business unit. Additional content from other TRCA teams will be added as the platform develops.



### Knowledge Sharing: Learn More

- [Watershed and Ecosystems Reporting Hub](#)
- [Environmental Monitoring](#)
- [Research and Science Working Group](#)
- [TRCA Research Agenda](#)
- [Development and Engineering Services Hub Space](#)

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### Knowledge Sharing: Latest Updates

[Knowledge Sharing - Climate Change Analysis at the Local Scale](#)

April 19, 2021 by Hub Admin [Featured](#)

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# Past Recordings

The collage consists of 18 individual presentation slides, each with a unique design and content. The slides are arranged in a grid-like fashion, with some overlapping. Each slide typically features the TRCA logo in the bottom right corner and the date of the presentation. The topics covered include:

- Watersheds and Ecosystems Reporting** (Draft Web Application): Laura Del Giudice, Senior Manager, Watershed Planning & Reporting; Kristina Dokoska, Project Coordinator, Ontario Climate Consortium. September 21, 2020.
- Introduction to the LID Treatment Train Tool**: Presented by Steve Auger, Sallie Abbasi and Yoniss David. November 5, 2020.
- TRCA's Recent Floodplain Mapping Updates**: Wilfred Ho\*, Christina Bright\*, Mike Todd\*\*. November 10, 2020.
- Working with Indigenous Communities**: Lunch and Learn. November 17, 2020.
- Green Infrastructure in Asset Management Planning**: Presented by Michelle Sawka, Senior Research Scientist; Tracy Timmins, Research Analyst. Ecosystem and Climate Science. December 8, 2020.
- Explore TRCA's Biodiversity**: How to get the most from our enormous natural heritage data set. Presented by Gavin Miller, Flora Biologist, Paul Prior, Fauna Biologist, and Parth Sheth, GIS Technician. December 17, 2020.
- Evaluating the effectiveness of fish habitat restoration across the Toronto waterfront**: Kaylin Barnes<sup>1</sup>, Lindsay Cartwright<sup>1</sup>, Rick Portis<sup>1</sup>, Jon Midwood<sup>1</sup>, Christine Boston<sup>1</sup>, Monica Granados<sup>1</sup>, Thomas Sciscione<sup>1</sup>, Colleen Gibson<sup>1</sup>, Olusola Obeime<sup>1</sup>. ECS Lunch and Learn January 14, 2021.
- Erosion Risk Management Program**: Lunch and Learn Presentation. Presented by Matt Johnston, Associate Director; Ashour Rehana, Manager; David Gingerich, Analyst. January 27, 2021.
- The Meadowway Research Overview**: Presented by TRCA. February 24, 2021.
- TRCA's Natural Heritage System Update**: Presented by Namrata Sheetha, Senior Research Scientist; Andrew Chen, Research Analyst. Ecosystem and Climate Science | Watershed Planning and Ecosystem Science | Development and Engineering Services. 24 Mar 2021.
- Thermal imaging for ecosystem conservation and restoration**: Jonas Hamberg. Wetland, Professional Fellow, TRCA and University of Toronto. Address: Jonathan Ruppert & Patrick Jones (L&L). February 24, 2021.
- Lake Ontario Fish and Aquatic Ecosystem Health**: Eat Safe Fish: A Collaborative Engagement with the Mississaugas of the Credit First Nation – by Valerie Francoeur. Don River Mouth Naturalization Project: Restoration of Fish Habitat in Toronto – The First Place in a Very Large Puzzle – by Angela Wallace. From Rivers Downstream to Lake Ontario: 20 years of aquatic sampling through The Regional Watershed Monitoring and Toronto Watershed Monitoring Programs – by Jan Moryk and Angela Wallace. May 12, 2021.
- Lake Ontario Restoration Initiatives**: Determining Practical Key Performance Measures for Wetland Restoration Practitioners: Challenges and considerations – by John Stille. RAP Delisting and the Adoption of the Integrated Restoration Prioritization Tool: Compiling TRCA data on waterfront and inland restoration planning and projects within the Toronto Area of Concern – by Andrew Ramesbottom and Colleen Gibson. Winning the War One Battle at a Time: Managing phragmites and DSV at a Toronto waterfront park – by Jennifer Smith. May 12, 2021.
- Precision Biomonitoring Webinar Series: eDNA: Applications, Advantages and Implications!**: May 12, 2021.
- Lunch and Learn: Wetlands, Warehouses or Both? – The Story of Project Lonestar and the Lower Duffins Wetland Complex**: Presented by Steve Heuchert, Development Planning and Permits; Shauna Fernandes Chagani, Planning Ecology. May 12, 2021.
- Long-Term Monitoring of Lake Ontario Coastal Wetlands Reveals Distinct Water Quality Profiles Associated with Hydrogeomorphic Type**: Kathryn Thomas<sup>1</sup>, Krista Chomicik<sup>2</sup>, Andrea Kirkwood<sup>1</sup>. 1 Ontario Tech University, 2 Toronto and Region Conservation Authority. June 23, 2021.
- Watershed and Ecosystems Reporting Hub**: Introduction and Demo of TRCA's New Reporting Hub. Presented by Shari Dahmer, Project Manager, Watershed Planning & Reporting. June 23, 2021.
- TRCA Water Resource System**: Methods and analysis for delineating Key Hydrologic Features & Areas. Presented by Jonathan Ruppert, Research Scientist, Ecosystem & Climate Science, WPES, DES. July 14, 2021.
- BROADVIEW AND EASTERN FLOOD PROTECTION**: Municipal Class Environmental Assessment Project. TRCA Lunch and Learn August 4 2021. August 4, 2021.
- Port Lands Flood Protection Enablement 2018-2023**: Presented by Maryam Iler, Manager, PMO. August 4, 2021.
- Urban Landscapes, Biodiversity, and Habitat Connectivity**: Andrew Chen<sup>1</sup>, Namrata Sheetha<sup>1</sup>, Jonathan Ruppert<sup>1</sup>, Triliana Gohar Gohar<sup>1</sup>, David Lattin<sup>1</sup>, Maria-scade Faria<sup>2</sup>. 1 Toronto and Region Conservation Authority, Waples, ON. 2 Department of Ecology and Evolutionary Biology, University of Toronto, Toronto, ON. TRCA Lunch and Learn September 14, 2021.
- Wildlife-vehicle collisions and hot spot identification for roads in Peel and York Regions**: Lindsay A. Cartwright<sup>1</sup>, Namrata Sheetha<sup>1</sup>, David Lawrie<sup>1</sup>, Jonathan Ruppert<sup>1</sup>. Toronto and Region Conservation Authority. September 14, 2021.
- Making the Connection**: The role of technology and habitat use in making good wildlife connectivity decisions. Presented by David Lawrie, Research Scientist. September 14, 2021.



# Thank you

For questions about the ECS Lunch and Learn Series, please contact:

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