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# The Regional Municipality of Durham Report

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To: Community Growth and Economic Development Committee  
From: Commissioner of Community Growth and Economic Development  
Report: #2026-CG-7  
Date: March 3, 2026

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**Subject:**

Update on Durham TREES Program – Celebrating 5 Years of Success

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**Recommendation:**

That the Community Growth and Economic Development Committee recommends:

That this report be received for information.

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**Report:**

**1. Purpose**

- 1.1 The purpose of this report is to provide a 5-year update on the Durham TREES program and next steps, as outlined in the accompanying report “Durham TREES - Celebrating 5 Years of Results November 2025”.
- 1.2 This report will be accompanied by a presentation from Pam Lancaster, Conservation Lands Coordinator, Ganaraska Region Conservation Authority (GRCA) and Roy Mosher, Restoration Coordinator, Central Lake Ontario Conservation Authority (CLOCA).

**2. Background**

- 2.1 Increased tree and shrub plantings are a key strategy to support natural system resilience in the context of a changing climate. The Durham TREES program was established in 2021 as a collaborative tree planting initiative between the Durham Region and all five local Conservation Authorities. The program supports implementation of the Durham Community Climate Adaptation Plan (2016) through nature-based climate solutions.

- 2.2 With administrative support from Durham Region, the program was coordinated by Ganaraska Region Conservation Authority (GRCA) on behalf of the five partner conservation authorities - Central Lake Ontario Conservation Authority (CLOCA), Kawartha Region Conservation Authority (KRCA), Lake Simcoe Region Conservation Authority (LSRCA), and Toronto and Region Conservation Authority (TRCA).
- 2.3 In 2024, the Government of Canada announced \$16.9 in funding for the Federation of Canadian Municipalities (FCM) [Growing Canada's Community Canopies](#) (GCCC) program, supporting the planting of at least 1.2 million new trees in approximately 300 communities by 2031.

### **3. Previous Reports and Decisions**

- 3.1 Through [report #2020-A-14](#) Regional Council approved an allocation of up to \$500,000 from the Climate Mitigation and Environmental Initiatives reserve fund to enhance tree planting and stewardship programs in partnership with Conservation Authorities and non-profit partners (e.g. Forests Ontario, Highway of Heroes Tree Campaign). This investment was leveraged to secure additional public and private funding, including contributions from Forests Ontario's 50 Million Tree Program, the Highway of Heroes Tree Campaign, One Tree Planted, and WWF Canada. From 2021 to 2025, the Durham TREES program successfully planted over 613,000 trees across the Region.
- 3.2 On June 26, 2024, Regional Council endorsed the Phase 2 of the Durham Trees Program and approved an allocation of \$240,000 from the Climate Mitigation and Environmental Initiatives Reserve Fund as the Region's municipal contribution in support of a joint funding application to FCM's GCCC program. CLOCA's funding application to FCM GCCC was successful, leading to a \$300,000 funding commitment over three years (2026-2028).

### **4. Program Performance**

- 4.1 The Durham TREES program has demonstrated strong performance in advancing tree planting, watershed resilience, and climate adaptation across Durham Region. The program has exceeded planting targets, achieved acceptable survival rates, and established a scalable model for regional collaboration.

## Number of Trees Planted

- 4.2 The program's original planting target of 279,000 trees was far exceeded. Thanks to successful efforts by the Conservation Authorities to leverage funding, a total of 613,580 trees were planted between 2021 and 2025 (approximately 76% above target).
- 4.3 Table 2 below provides a summary of trees planted by each conservation authority.

**Table 2:** Trees planted compared to targets (source: Durham TREES - Celebrating 5 Years of Results November 2025)

Conservation Authority	Trees Planted (2021-2025)	Targets
GRCA	40,450	45,000
CLOCA	130,385	84,000
TRCA	284,469	50,000
LSRCA	94,460	45,000
KRCA	61,029	55,000
GRCA and CLOCA (Clarington Trees for Rural Roads program)	2,787	N/A
Total Planted	613,580	279,000
Approx. Hectares Planted	360	164

- 4.4 The program has provided learning outcomes related to tree planting practices within the context of a changing climate. The 5-year program report provides a summary of how the conservation authorities are adjusting their approach to tree selection, sourcing, and planting. This includes considerations for seed zones, tree stock type, tree stock production, planting diversity, planting timelines, site preparation and post plant tending.

## **Partnerships and Awards**

- 4.5 The program has been supported through strategic partnerships with national, provincial, and local organizations, including World Wildlife Fund, Forests Canada (formerly Forests Ontario), Trees for Life, Trees Canada, LEAF (Local Enhancement and Appreciation of Forests), and local area municipalities. These partnerships enhance program effectiveness by supporting coordinated communications, professional capacity-building, program referrals, and increased access to technical and financial assistance for landowners.
- 4.6 Durham TREES received the Jessica Markland Partnership Award through the Durham Environment and Climate Advisory Committee.

## **Marketing and Outreach**

- 4.7 Led by GRCA, a coordinated marketing and outreach program was delivered with oversight from the Region of Durham. The campaign has been delivered annually through a combination of print and digital media products. Outreach in 2022 and 2023 included the distribution of a Durham TREES brochure to more than 12,000 rural households with targeted priority areas.
- 4.8 The Conservation Authorities delivered promotion using various tools such as program mailers, social media posts, unpaid advertising, networking, door knocking and mailbox drop offs. Presentations were delivered and articles were written for various organizations including the Durham Region Round Table on Climate change and the Ontario Urban Forest Council. The program website ([durhamtrees.org](http://durhamtrees.org)) serves as a central platform, enabling residents to connect with the appropriate conservation authority.

## **5. Next Steps**

- 5.1 Building on program success and available funding, a new three-year agreement (2026-2028) is being developed to support the continued delivery of the Durham TREES program. CLOCA will provide administration on behalf of Durham Region and the five Conservation Authorities, including program planning, implementation, reporting, and outreach. Over the three-year term of the agreement, the program will deliver 19,500 rural afforestation plantings and 3,000 urban naturalization plantings, for a combined total of 22,500 trees across Durham Region.

- 5.2 The proposed planting targets for the 2026–2028 period are lower than those achieved during Phase 1 of the Durham TREES Program as a result of a planned shift in program scope and delivery approach. Phase 1 focused primarily on large-scale rural afforestation, where small (1–3-year-old) seedlings were planted in large blocks, typically with a minimum threshold of 500 trees per site. This model supported high-volume planting and the rapid establishment of new forest cover on rural private lands.
- 5.3 Phase 2 will maintain afforestation activities while introducing urban and suburban naturalization projects that occur on smaller sites and utilize larger, potted planting stock and a more diverse species mix. The new Naturalization Service is more site-specific and resource-intensive and are intended to enhance and/or build on existing natural heritage features within the Region and increase the resilience of the overall natural heritage system. Consequently, the overall number of trees planted annually is expected to be lower than in Phase 1, while delivering targeted ecological and community benefits in built-up areas.

## 6. Relationship to Strategic Plan

- 6.1 This report aligns with/addresses the following Strategic Direction(s) and Pathway(s) in Durham Region's 2025-2035 Strategic Plan:
- a. Environmental Sustainability and Climate Action
    - E1. Reduce corporate greenhouse gas emissions to meet established targets.
    - E3. Prepare for and respond to severe weather impacts.
    - E5. Respect the natural environment, including greenspaces, waterways, and agricultural lands.

## 7. Attachments

Attachment #1: Durham TREES - Celebrating 5 Years of Results November 2025

Respectfully submitted,

Original signed by

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Sandra Austin  
Commissioner of Community Growth and  
Economic Development

Recommended for Presentation to Committee

Original signed by

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Elaine C. Baxter-Trahair  
Chief Administrative Officer



# Celebrating 5 Years of Results

## November 2025



## **Introduction**

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Trees have been identified as a vital nature-based solution to building resiliency in natural spaces. This resiliency is needed more than ever to allow ecosystems to remain healthy and recover from impacts such as climate change, invasive species, and habitat modification.

The Regional Municipality of Durham (herein referred to as the Region of Durham) and area municipalities are leaders in tackling climate impacts through the implementation of award-winning plans, such as the *Durham Community Climate Adaptation Plan*, 2016. The Climate Adaptation Plan along with *Vision to Region of Durham Community Climate Change Local Action (Mitigation) Plan*, 2012 and the *Keeping Our Cool* report have identified tree planting as an important nature-based climate solution.

To support tree planting, in 2021 the Region of Durham, and the five Conservation Authorities that manage watersheds within the Region, entered a partnership to create and deliver Durham TREES.

Durham TREES is a collaborative venture between the Region of Durham, Central Lake Ontario, Toronto and Region, Lake Simcoe Region, Kawartha Region and Ganaraska Region Conservation Authorities. Through shared marketing, professional development and networking, the conservation authorities can get boots on the ground to engage with landowners to encourage and undertake tree planting.

This report highlights the achievements of Durham TREES throughout the past 5 years (2021 to 2025) and proposes next steps that are critical to continuing to build resiliency within local watersheds.

## **Partnerships**

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Collaborative partnerships are key to effective implementation of climate adaptation plans and actions. At the core of Durham TREES are six partners that are working together to advance tree planting efforts within Durham Region: the Regional Municipality of Durham, Central Lake Ontario, Toronto and Region, Lake Simcoe Region, Kawartha Region and Ganaraska Region Conservation Authorities. However, partnerships and engagement with additional organizations are required to further the reach of Durham TREES. As such, partnerships, engagement and collaboration also occur with World Wildlife Fund, Forests Canada (formerly Forests Ontario), Trees For Life, Trees Canada, LEAF (Local Enhancement and Appreciation of Forests), and Region of Durham area municipalities. Results from these partnerships include professional development, shared marketing and messaging, partner program referrals, improved customer service, increased landowner support (both technical and financial), and program support through increased capacity funding.

Durham TREES was the recipient of the Jessica Markland Partnership Award through the Durham Environment and Climate Advisory Committee. This award recognizes the co-

operative efforts of those who strive to enhance the environment and promote sustainability by building partnerships with public and community interests, and businesses.

## Marketing

A marketing campaign was created in 2021 by the conservation authorities with review by the Region of Durham to support the launch of Durham TREES in April 2022. The campaign, that occurred in the spring and/or fall of 2022, 2023 and 2024, consisted of print and digital media products that were created and distributed regionally by Central Lake Ontario Conservation Authority, and locally by each respective conservation authority. The campaign continues today through collaborative efforts.

Part of the campaign in 2022 and 2023 included the distribution of a Durham TREES brochure as part of the Metroland newspaper delivery to over 12,000 rural households in target areas defined by each conservation authority.

In addition to the regional media campaigns, the five conservation authorities undertook local engagement using various tools such as Durham TREES mailers, social media posts, local unpaid advertising, networking, door knocking and mailbox drop offs. Presentations were delivered and articles were written for various local organizations including the Durham Region Round Table on Climate change and the Ontario Urban Forest Council.

A significant asset to the Durham TREES program is the [durhamtrees.org](http://durhamtrees.org) website. The website is informative, interactive and allows a visitor to quickly engage with the appropriate conservation authority. Once matched with a conservation authority, a landowner will learn about tree planting and general restoration opportunities. In 2023, updates were made to the website including testimonials, pictures, graphics and additional educational pieces. One significant benefit of [durhamtrees.org](http://durhamtrees.org) is that it can be quickly updated in-house with locally created content and testimonials from actual projects undertaken within the Region of Durham.



## **Engagement**

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A marketing plan developed and delivered locally, while leveraging partner communication products, is most effective when implemented consistently. With fewer opportunities to capture and maintain an individual's attention through traditional communication products, repeating efforts is critical to catch the attention of landowners who may be interested in planting trees.

The number of inquiries resulting from regionally delivered communication products (e.g., digital and print ads) increased between 2022 and 2023, however with the loss of Metroland print media in 2024, fewer inquiries were generated from digital ads.

Each conservation authority included specific targeted local marketing products in their own engagement efforts, and these efforts increased the exposure of Durham TREES. These local efforts resulted in additional inquiries, which varied among conservation authorities.

Engagement may not always result in an immediate tree planting project, but other benefits are realized, such as increased awareness of the local conservation authority and the programs offered, over-the-counter tree seedlings sales, forest management advice or property tax saving program enrollment, or the implementation of non-tree planting stewardship projects.

Continuous local marketing efforts need to complement the consistent regional promotion of Durham TREES, for the best results in generating engagement and ultimately expanding tree planting opportunities and outcomes. The ability for Durham TREES to support both local and regional marketing is important for the ongoing engagement of Region of Durham residents who are interested in tree planting.

## **Number of Trees Planted and Survival Estimates**

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Delivery of Durham TREES began in 2021, with the first trees being planted in Spring 2022. Table 2 outlines the yearly totals of trees planted by conservation authority and compares those yearly totals to 2021, before Durham TREES existed, and to the projected number of trees outlined in the proposal to the Regional Municipality of Durham.

The total project tree planting target of 279,000 trees was exceeded, with 490,588 trees planted in total between 2022 and 2025 (76% increase over the target). As noted in Table 2, conservation authorities nearly achieved or, in many cases, exceeded targets. These successes also occurred during a global pandemic and economic instability. Variability between years and among conservation authorities generally is attributed to local factors such as landowner interest, development and land use pressures, local economics and social factors. In addition, building program recognition within a delivery area takes time, and this has become increasingly challenging with the decline of certain media tools (e.g., loss of local print media).

In accordance with the guidelines from a primary funder (Forests Canada) survival assessments were completed in years 2 and 5. This assessment interval is recognized as the industry standard and captures a 5% sample of all species planted on an individual site. Preliminary results of survival assessments according to Forests Canada methods show survival rates range from 61%-97% and average 71% which is considered acceptable and does not require replanting. The projects will be assessed again in year 5 and further recommendations or actions will be developed to ensure long-term success of these plantings. Depending on the funder, survival assessment methodology may differ.

Table 2: Trees planted compared to targets

Conservation Authority	Conservation Authority Total Trees Planted						Projected Totals
	2021*	2022	2023	2024	2025	2022 to 2025	
GRCA	15,275	8,450	2,825	8,550	5,350	25,175	45,000
CLOCA	23,000	27,660	21,000	23,780	34,945	107,385	84,000
TRCA	57,027	43,955	76,315	89,388	17,784	227,442	50,000
LSRCA	19,620	11,210	19,015	23,600	21,015	74,840	45,000
KRCA	7,200	3,850	23,796	17,975	8,208	53,829	55,000
GRCA & CLOCA w Clarrington Trees for Rural Roads Program	870	602	496	428	391	1,917	N/A
<b>Total Planted</b>	<b>122,992</b>	<b>95,727</b>	<b>143,447</b>	<b>163,721</b>	<b>87,693</b>	<b>490,588</b>	<b>279,000</b>
<b>Approximate Total Hectares Planted **</b>	<b>72</b>	<b>56</b>	<b>84</b>	<b>96</b>	<b>52</b>	<b>288</b>	<b>164</b>

\*Year 1 of the project did not have any planting targets.

\*\*Calculation based on 1700 trees per hectare or 700 trees per acre, some conservation authorities planted at a higher rate.

## Financial Leverage

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The Regional Municipality of Durham's contribution was further supported by annual contributions of \$90,000 from the World Wildlife Fund between 2021 and 2023, which helped advance engagement through Durham TREES.

One of the goals of Durham TREES is to leverage municipal financial contributions not only to increase program delivery, but also to encourage greater landowner financial support. To achieve this goal, each conservation authority further leveraged Durham Trees funding by partnering with organizations that supported tree planting through landowner grants. Partners included Forests Canada (formerly Forests Ontario), and Trees for Life, which both typically fund tree planting at \$2.60 per tree, including survival assessments. Some conservation authorities were able to further support landowner planting costs through conservation authority or conservation foundation funding programs.

## Climate Adaptation

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Tree planting is an important tool in the fight against climate change, but unfortunately the way in which trees are selected, sourced and planted must adapt to a rapidly changing climate to ensure species can naturally adjust. Therefore, conservation authorities and tree planting practitioners must adapt. The following outlines how the five conservation authorities are adjusting to meet this challenge.

### *Seed zones*

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A seed zone is a geographic area where seeds can be collected and planted with a low risk of failure and are able to adjust adequately or appropriately to the environment. Seed zones are based on genetic criteria and climate information. Since climatic zones are geographically shifting, seed zones criteria are also shifting. This means that the actual species or the genetic variability of species may no longer be adapted to the area.

To adapt to this challenge, conservation authorities:

- Rely on local seed zones and nearby seed zones that are generally accepted within the tree planting industry.
- Consider a seed zone mix that includes 50% local seed zone, 25% from one seed zone south and 25% from two seed zones south of the planting location. This mix can be difficult to achieve and is dependent upon tree stock availability.
- Trial a seed that is one or two zones different from the local zone.
- Accept seedlings from outside a historical range, within reason, and only when research shows they are more likely to adapt successfully.
- Consult with tree nurseries when considering a seed zone trial.
- Participate in knowledge sharing with other practitioners to determine what is working on the landscape.

### *Tree stock type*

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The type of tree stock that is available from a nursery includes bare-root, plugs, and potted stock. The age of the tree stock can vary within the tree stock type. When deciding what type of tree stock to use in relation to climate adaptation, decisions are based on local research/learning from others, past planting success and anecdotal evidence, and research or agency/government recommendations. Availability of different tree stock types, especially combined with seed zone types also determines how much tree stock variation can be considered in a planting project or within a given year. When considering different tree stock types, there may be limitations with the cost of the tree stock and the projects budget.

While species range projections based on climate modeling are readily available, published research on tree stock type variations and their adaptability to climate change is limited. This means that trialing different tree stock types is left to the tree planting practitioners. Toronto and Region Conservation Authority is currently undergoing a research study in Peel and York to evaluate the effects of root stock type (bare root, container, reforestation seedling and acorn) on planting success under different climate and planting conditions. This study also evaluates the use of tree tubes on deciduous seedlings, deer fence, mycorrhizae (root and fungi relationship) and watering.

### *Tree Stock Production*

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Producing good-quality and climate adapted tree stock is a critical step in afforestation. The science, research and methods are studied, trialed and implemented by local growers, the nursery industry, and research agencies dedicated to seed and tree stock. Conservation authority staff communicate with nurseries regarding interests in adapting to climate change and sourcing different tree stock options. Through these discussions, conservation authorities and nurseries can work together to continually consider climate adaptation.

Conservation authorities have an opportunity to become involved in seed collection, thereby trialing local level differences in seed zones and tree stock types. However, finding capacity and resources to experiment on conservation authority lands is limited.

### *Planting Diversity*

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Increasing plant diversity in any habitat type will build resilience within the local ecosystem and will reduce situations where the majority of one plant species may disappear, leaving the whole ecosystem vulnerable to degradation. Increasing diversity will also reduce climate related hazards such as loss of forest cover from fire, pests and disease and climate related stress (e.g., drought). Diversity is continually increased through the addition of various tree stock age, and hardwoods or shrubs along-side primarily conifer stock. Hardwood diversity can include silver maple, red oak, swamp white oak, hackberry, and bitternut hickory. Carolinian species, such as tulip tree, sycamore, shagbark hickory can support while also providing seed zone variation. Understanding what species may

be better adapted to future climate conditions can further build future diversity, when these species are mixed with locally adapted species.

Although many hardwoods are a target for rodent and deer predation, by scattering the species throughout the site, survivability can increase. Even if only a few hardwoods survive, they can be an excellent seed source for the future stand.

Conversely, there is research that indicates what tree species should be reconsidered when considering a site. Climate models can be used to predict species ranges up to 2040 and 2100. Commonly planted species such as white spruce, balsam fir, Eastern white cedar, paper birch, tamarack and trembling aspen are predicted to retreat further north and decline or become absent from the local landscape, Anecdotal and shown in survival assessments, white spruce is already struggling to establish and thrive, prompting practitioners to switch to Norway spruce. Norway spruce is considered naturalized by the tree planting industry and an accepted species to many landowner grant programs.

### *Planting Timelines*

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Weather patterns and climate conditions have always been a variable of tree planting that is beyond control. Under a changing climate, the spring planting timing window is becoming more uncertain. This variability impacts each step of the process—from lifting tree stock and managing risks to nursery stock (e.g., early frost or premature budding), to the planting window, which can close quickly due to unreasonable temperatures, excessive precipitation, or drought. Changes in timing windows means that some conservation authorities have had to move away from hiring contract staff, who are generally students, to hiring contractors in order for planting to occur quicker. However, planting can only occur as quickly as tree stock is processed at the nursery. Nursery operations are also controlled by availability of seasonal workers.

To achieve more desirable planting conditions that spring planting once provided on a more consistent basis, some conservation authorities are trialing fall plantings in soil conditions that are more suitable (e.g. soil types with sand, not clay). However, given species dormancy cycles, there is a reduced amount of tree stock options, and contractor services can be limited.

### *Site Preparation and Post Plant Tending*

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Landowners are always advised as to what pre and post plant tending should occur to improve survivability. However, the added cost of tending can make tending prohibitive. In some cases, landowners intend to complete beneficial site preparation or post plant tending activities but often lack the required equipment or skills to carry out tasks, and the services must be hired instead. To support site preparation and tending, additional landowner support grants are explored, however their availability is often limited.

Invasive species pose an ongoing and increasing challenge to the success of tree planting projects and the continual growth of a planting site. The process to control or eliminate invasive species increases costs and extends project management timelines. However, ensuring planting site diversity and having a plan to manage threats such as invasive species will ultimately help the site to adapt to climate change,

### *Adapting to Climate Change with a Landowner*

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As tree planting professionals, creating a planting plan requires not only considering all the risks to the project, but also aligning with the landowner's goals and objectives. Consideration must also be given to the landowner's goals and objectives. Some landowners are unwilling to invest in adaptive techniques or insist on certain tree species. It may be inappropriate to conduct trials or experiments on private lands due to study framework constraints, and because most projects leverage financial investment from the landowner. The need to consider climate change when working through tree planting projects with private landowners requires balancing traditional methods, industry recommendations, and studying site-specific adaptive techniques.

### **Practitioner Thoughts on Climate Adaptation**

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Conservation authority staff involved in Durham TREES were asked about climate adaptation. The following summarizes their perspectives.

*What do you think is the most pressing issue in adapting tree planting to climate change?*

- Unpredictable weather that now occurs during an already limited planting window.
- A limited supply of diverse tree stock (seed zone, species, ages) at the nurseries, as well as their limited ability to adjust to changing demands. There is also added risk to nurseries when diversifying their offerings.
- Variability and unpredictability of results for landowners, and their willingness to accept different forms of risk.
- Limited research on climate adaptation beyond seed/tree stock selection. There is also a need to revisit emerging research, including climate model updates and new information on species range shifts.
- Seed crop health and harvest timing are impacted by climate change, combined with the need for more seed collectors and/or funding for collection.
- Tree mortality from other factors such as predation and invasive species, along with the need for increased funding to manage for these risks alongside climate change.
- The need to maintain or increase biodiversity when the scope and extent of climate impacts are unknown, There is a need to balance planting species that can survive in today's climate with those projected to be more resilient in the future. However, focusing only on resilience risks reducing biodiversity within ecosystems when vulnerable species currently play an important role,

- Ensuring sufficient and consistent financial and human resources to deliver tree planting programs while also adapting them to climate variability.

*Are there any specific tools, resources, or research papers you rely on to guide your climate-adapted tree planting efforts?*

The following are examples of resources:

- Forest Gene Conservation Association (<https://fgca.net/climate-change/>)
- Natural Resources Canada (<https://natural-resources.canada.ca/climate-change/climate-change-adaptation>)
- Lake Simcoe Conservation Authority. 2018. Adapting Forestry Programs for Climate Change.
- Lake Simcoe Conservation Authority. 2024. Climate Resilient Planting for the Lake Simcoe Watershed.

*Do you have any recommendations for improving how conservation authorities address climate change in their tree planting and forest management practices?*

- Continue adapting approaches and maintaining open lines of communication with peers and partner agencies.
- Increase diversity wherever possible, not only species, but also in seed zones.
- Invest in site preparation, tending and monitoring programs where resources allow,
- Stay up to date with leading-edge science and research.
- Seek funding that supports diverse plantings (tree stock type, age, species, and shrubs), as well as local-level research and trials.
- Increase funding for long term forest management to study forest ecosystems as they mature, complete forest management practices (thinning, harvesting), and improve overall forest health.
- Seek invasive species funding, especially in urban areas where pressures are higher. Planting success would improve significantly if invasive species could be controlled before planting, allowing trees to reach “free-to-grow” height before invasives return.
- Encourage knowledge sharing (and documentation of that knowledge) among practitioners who are witnessing change on the ground.
- Promote the need for funding that supports site preparation and post-planting tending.

## Carbon Sequestration

After reviewing various carbon sequestration calculators, including i-Tree, Carbon Budget Model of the Canadian Forest Sector (CBM-CFS3), and COMET-Planner, i-Tree, and its tool “MyTree” was selected to calculate carbon sequestration and CO<sub>2</sub> equivalent,

i-Tree is a state-of-the-art, peer-reviewed software suite from the USDA Forest Service that provides urban and rural forestry analysis and benefits assessment tools. MyTree is user-friendly and can quickly calculate carbon benefits. Other tools, including those noted above, can still support tree planting initiatives.

MyTree was used to calculate carbon sequestered and CO<sub>2</sub> equivalent. The results did not differ between different towns in the Region of Durham (e.g., Beaverton, Orono, Whitby), so Whitby was selected as the reference location for all calculations. The tree condition was set to “excellent”. Trunk diameter was set at the lowest value of 2.5 centimeters (1 inch). Sun exposure was set to full and the question “Is it within 60 feet of a building?” was set to “No”.

Seven bareroot species, that were planted between 2022 and 2025 were selected to calculate carbon sequestration. These trees were selected because more than 9,000 of each were planted, and they represent the majority of the tree stock type planted. The carbon sequestration value does not represent all trees planted through Durham TREES and therefore is considered a minimum amount of carbon sequestered. All tree stock was treated as having a diameter of 2.5 centimeters, regardless of tree stock type. For calculation purposes, it was assumed that a 2.5 centimeter diameter tree is approximately 10 years old.

Species	Number Planted	Trunk DBH (2.5 cm) ~10 years old tree		~ 30 years old tree		
		Carbon Sequestered (Tonne)	CO <sub>2</sub> Equivalent (Tonne)	Carbon Sequestered (Tonne)	CO <sub>2</sub> Equivalent (Tonne)	Equivalent Number of Cars*
Eastern White Pine	112,677	34	124	5,284	19,375	4,732
Red Pine	25,340	15	56	1,843	6,756	1,653
Norway Spruce	37,740	11	39	1,018	3,733	913
White Spruce	51,180	18	66	1,200	4,400	1,075
Eastern White Cedar	43,923	32	119	1,624	5,954	1,458
Tamarack	9,654	5	17	663	2,432	595
Red Oak	10,485	5	17	572	2,096	513
<b>Total</b>	<b>290,999</b>	<b>120</b>	<b>438</b>	<b>12,204</b>	<b>44,746</b>	<b>10,939</b>

- \* number of cars calculated by dividing the kilometers equivalent in offset by 16,000 which is the average distance driven in a year in Ontario.

## **Next Steps and Recommendations**

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Durham TREES has proven to be a valuable landowner engagement program that successfully increases tree planting opportunities and the number of trees planted. Like any landowner program, many variables affect year-to-year participation (e.g., financial means, spending priorities, property management priorities). This variability highlights the importance of maintaining a sustainable program, such as Durham TREES, so that ongoing engagement with landowners can continue. In many cases it takes multiple conversations with a landowner before a tree planting project occurs. Therefore, consistent municipal support is needed to ensure trees continue to be planted across the Region.

Ongoing consideration of and adaptation to climate change impacts on tree establishment is also required by conservation authority staff. This can be supported through research conducted on public lands, given limitations of trailing adaptive techniques on private property.

Recommendations for the continuation of landowner engagement to support large scale tree planting through Durham TREES includes continual support from the Region of Durham. Additional funding should be secured outside of the Federal 2 Billion Tree program, to reduce funding overlap and enhance the ability to match and leverage municipal contributions. Continuation of support is critical to ensure capacity is built within each conservation authority and the collaborative is maintained, in order to plant more trees throughout the Region.

As this report is being written, an additional opportunity is being developed, where Durham TREES will see the introduction of a potted tree stock component that will engage landowners with properties that can support less than 500 trees. This adaptation of the program proves that Durham TREES can be a valuable tool to increase natural cover across the Regional Municipality of Durham and help fight against climate change.