

Natural Asset Inventory and Condition Assessment

From street trees and parks to woodlands and wetlands

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Possibility grows here.















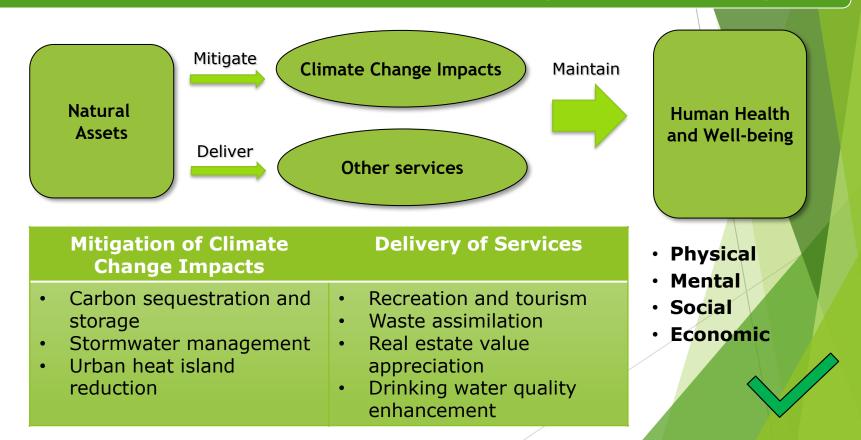


Presentation Outline

- Role of Natural Assets in Climate Resilience
- Natural Assets: What are They?
- Rationale for including them in the Asset Management Planning
- Natural Asset Inventory
- Natural Asset Condition Assessment
- CVC's Rapid Condition Assessment for Natural Assets
- CVC's Rapid Condition Assessment for Street Trees and Open Space
- Take Away Messages
- Next Natural Asset Webinars

Climate Change: A Risk Business.....

Role of Natural Assets in Addressing Climate Change



Natural Heritage System Protection and Climate Resilience

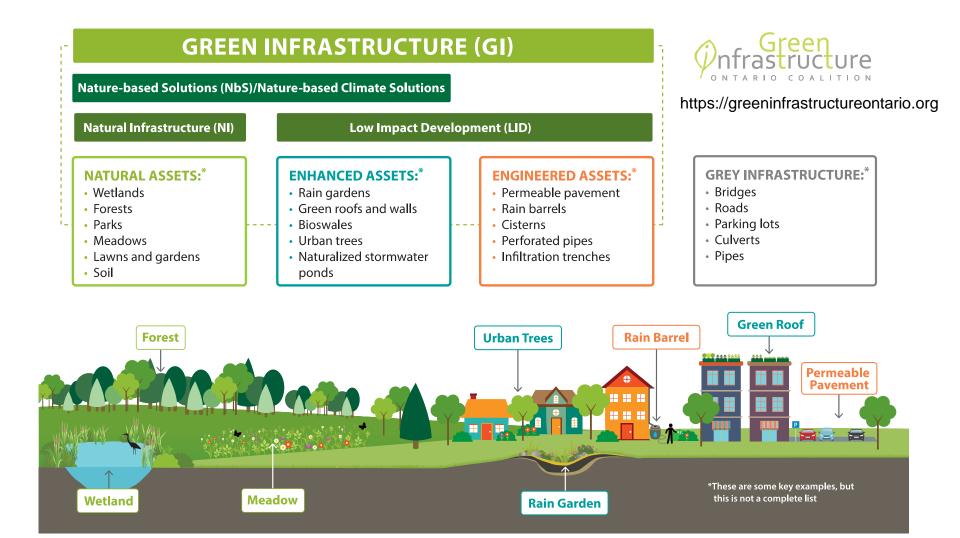
Protecting and restoring the natural heritage system and its natural assets is one of the most important climate change actions we can undertake for local ecosystems.



Defining Natural Assets

... the stock of natural resources or ecosystems that are relied upon and managed, or could be managed, by a municipality for the sustainable provision of one or more local government services.





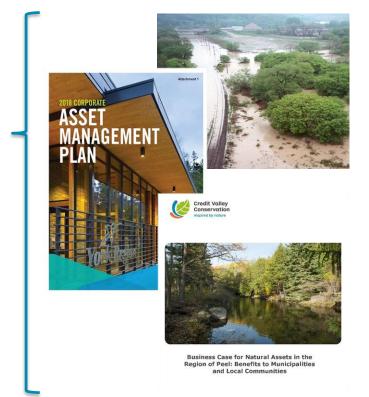
Rationale for Natural Asset Management (NAM)

Goal: Help municipal partners to measure and manage the contribution of natural assets to municipal service delivery

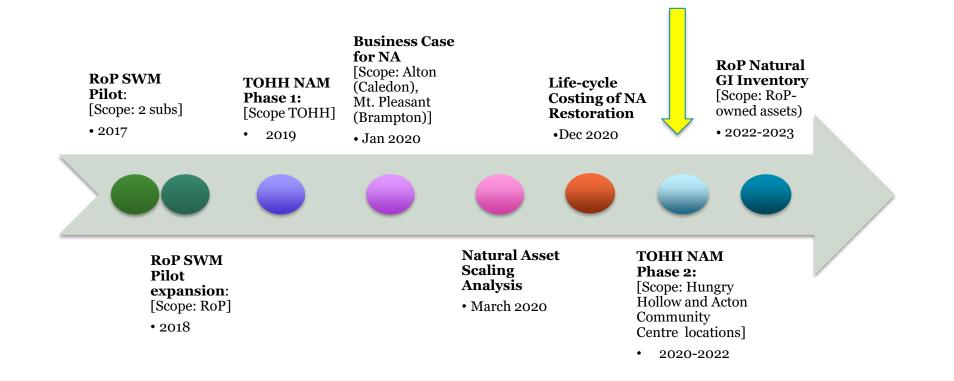




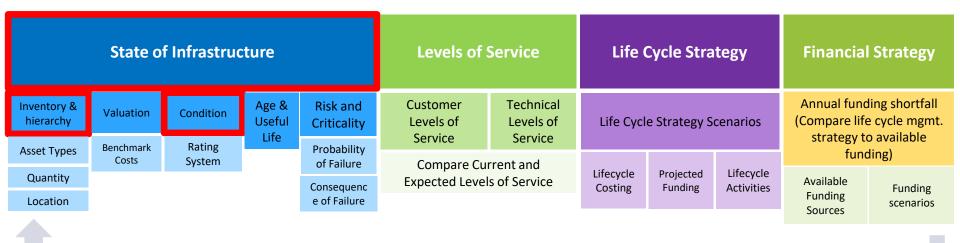
- Comply with the O.Reg.588/17
- Increase infrastructure asset portfolio resiliency to Climate Change
- Reduce the risk, capital and operating expenses of related grey infrastructure (as some natural assets can deliver equivalent services at lower cost/risk)
- Assist in maintaining the desired level of service



CVC- led Municipal Natural Asset Management (NAM) Projects



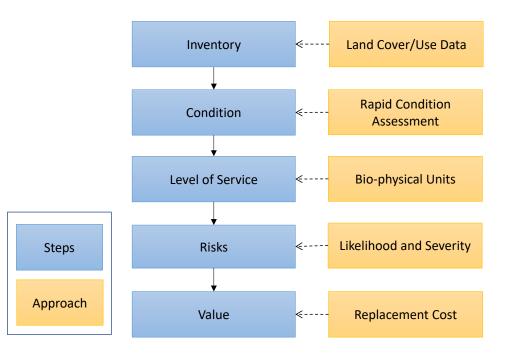
Natural Asset Management



Continuous Updates and Improvements



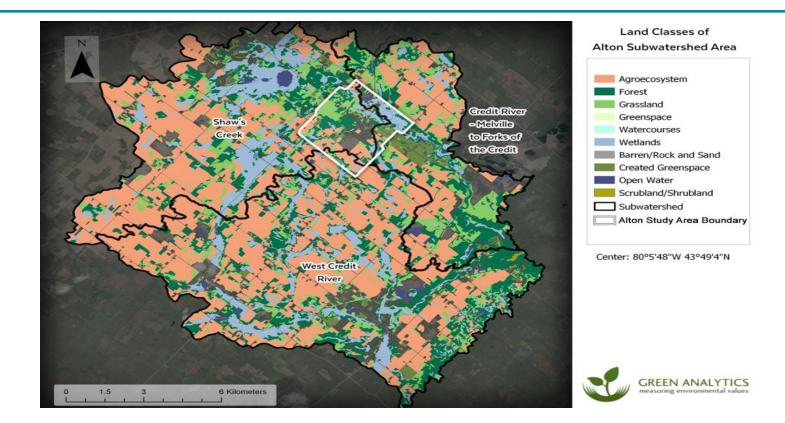
Inventory and Condition Assessment in NAM



Categorizing Natural Assets

Ecological Land Classification (ELC) Code	National Ecosystem Services Classification System
Cultural Woodland (CUW)	Grassland
Delicious Swamp (SWD)	Wetland
Cultural meadow (CUM)	Grassland
Mixed Swamp (SWM)	Wetland
Cultural Savannah (CUS)	Grassland
Thicket Swamp (SWT)	Wetland
Coniferous Plantation (CUP3)	Forest
Cultural Thicket (CUT)	Grassland
Coniferous Forest (FOC)	Forest
Coniferous Swamp (SWC)	Wetland
Mixed Forest (FOM)	Forest
Deciduous Forest (FOD)	Forest

Natural Asset Types



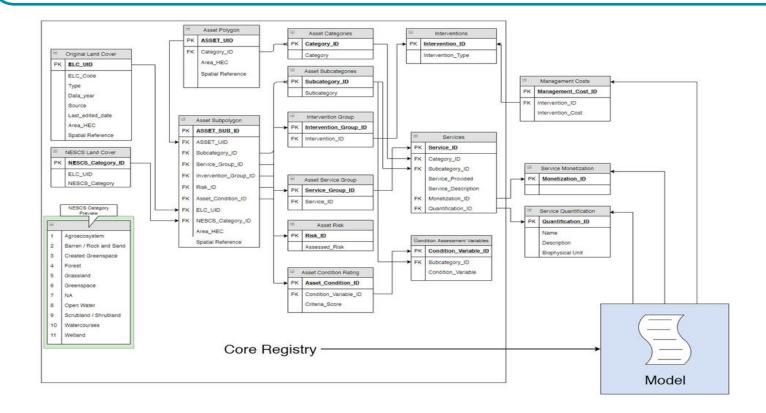
Integrating Natural Assets into Asset Management Plans – Outputs

- Inventory registry

 (including asset ID, area,
 condition assessment, level
 of service, etc.)
- Consistent with State of Infrastructure Report (where feasible)



Natural Asset Registry Database



Condition Assessment in the municipal asset inventory (example)

OBJECTID	IA_ARE	ELC_	COD TYPE	Source Da	Source of	Woodlan	LandU_	ClSite_Nam	Conditior	Municip_Condition	Туре	Class
1	1	FOM	Mixed for	2018	2018 15cm	Woodland	Natural	Acton Con	4.727273	1 Very Good	Mixed For	Upland Fo
2	2	CUW	Cultural w	2018	2009 Orth	Woodland	Natural	Acton Con	3.963636	2 Good	Cultural V	Upland Fo
3	3	CUS	Cultural sa	2018	2018 15cm		Natural	Acton Con	4.6	1 Very Good	Cultural S	Meadow S
4	4	CUS	Cultural sa	2018	2018 15cm		Natural	Acton Con	4.381818	1 Very Good	Cultural S	Meadow S
5	5	SWD	Deciduous	2018	2009 Orth	Woodland	Natural	Acton Con	4.709091	1 Very Good	Deciduou	Swamp
6	6	CUM	Cultural m	2018	2018 15cm		Natural	Acton Con	5	1 Very Good	Cultural N	Meadow S
7	7	SWD	Deciduous	2018	2009 Orth	Woodland	Natural	Acton Con	4.745455	1 Very Good	Deciduou	Swamp
8	8	FOD	Deciduous	2018	2018 15cm	Woodland	Natural	Acton Con	4.654545	1 Very Good	Deciduou	Upland Fo
9	9	MOR	Recreation	2018	2018 15cm		Agricultu	Iri	5	1 Very Good	Recreatio	Open Spac
10	10	MOR	Recreation	2018	2018 15cm		Agricultu	Iri	5	1 Very Good	Recreatio	Open Spac

Rapid Condition Assessment Method

Our Natural Assets?

How many do we have? Where are they located? What type of natural assets? What is their condition? Where to start?



Natural Asset Inventory

An inventory of natural areas is critical to assess the condition of natural assets and to develop a Natural Asset Management Plan

The Challenge

- Limited Resources
- Limited Expertise



Rapid Condition Assessment Method

Provides an approach to conduct a high-level assessment of the condition of municipal natural assets

Based on simplified methods of

- Ecological Land Classification (ELC)
- Ontario Wetland Evaluation System



Who can apply it?

- Basic understanding of physical characteristics natural areas
- Surveyors could be university or college students in ecology, biology, or geography
- Not to replace technical assessments conducted by professionals
- Help identify when and where an expert opinion might be needed



Elements of an Asset

- Asset Size
- Vegetation Composition, Structure & Abundance
- Tree Size
- Abundance of dead trees and logs
- Disturbance Intensity
- Presence of High-Risk Invasive Species



Rapid Condition Assessment Method

Experienced people often have a sense of the condition of a natural area based on the presence or absence of certain elements

This approach attempts to identify and quantify those elements to assess asset condition



Application

- Designed to assess a variety of different types of natural assets
 - Woodlands
 - Wetlands
 - Meadows
 - Potentially Rivers & Stream



Rapid Condition Assessment Methodology (RCAM): Step 1- Field Assessments

Scorecards

Picture Guides

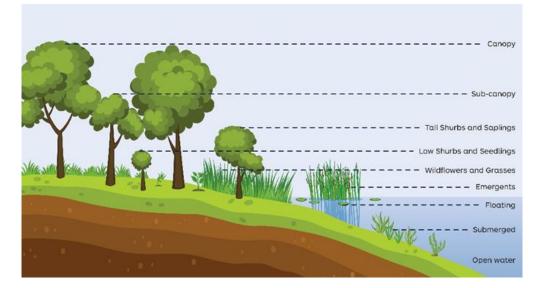
Natural Asset Health Approximation

Site Name				
Asset ID				
Date (YYYYMMDD)				
Time (24:00)				
Surveyor(s)				
Easting	Northing			
Photo(s)				
Area (ha)				

Type of Natural Asset	Forest	Plantation	Successional Woodland	Meadow
or Vegetation	Treed Swamp	Shrub Swamp	Marsh	Aquatic
Community	Fen	Bog	Other	

		Species in o		Dominant Specie sing abundance (Ab ">>"		Optional er than, ">" greater than, "+	" equal to)	
Layer	%Cover	Species 1	Ab	Species 2	Ab	Species 3	Ab	Species 4
Canopy trees								
Sub-canopy								
Tall shrubs & Saplings								
Low shrubs & Seedlings								
Wildflowers, Ferns, Grass-like								
Moss, Lichen, Liverworts, Fungi								
Broad/Robust Emergent								
Floating-leaved aquatic								
Free-floating								
Submergent								
Open water								
Manicured Lawn								
Bare Soil or Rock								
Impervious cover (e.g. roads,								
parking lots, buildings)								

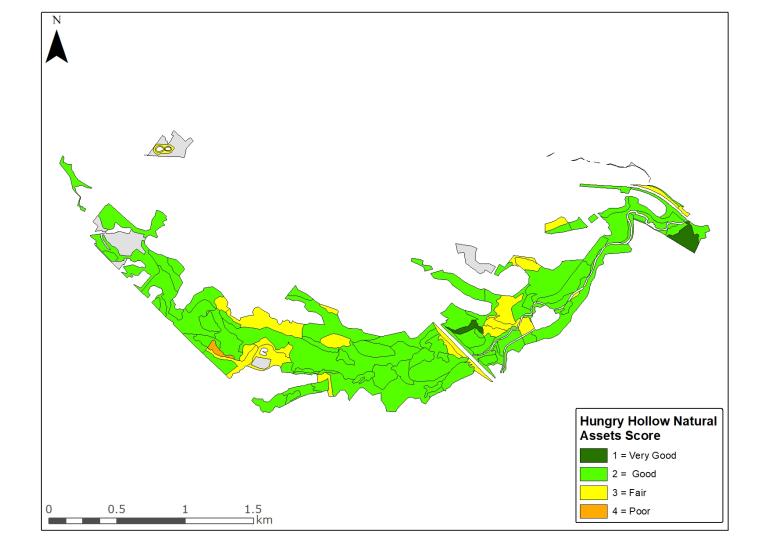
Tree Diameter	0-10 cm	10-25 cm	25-50 cm	>50 cm	Total Cover	% Crown Mortality
Live					= 100 %	
Standing Dead					≠ 100 %	



Indicator	Good (5 points)	Fair (3 points)	Poor (1 point)
Tree size	Mix of tree sizes with some exceeding 40cm	Most trees between 20-40	Most trees are under 20cm DBH
Tree Crown Mortality	< 10 % of trees have severe canopy decline	10 - 25% of trees have severe canopy decline	> 25 % of trees have severe canopy decline
Standing Dead Wood	At least 10% of standing trees are dead (2 of 20 trees).	Approximately 5% of standing trees are dead (1 of 20 trees).	Less than 5% of standing trees are dead (fewer than 1 of 20 trees).
Downed Dead Woody	Enough downed wood is present that you are constantly stepping over it while walking through the forest	Occasional downed wood	Virtually no downed wood
		tegory Score ()	
Unauthorized Trails	None or Few and Faint	Occasional and clearly visible	Many and clearly visible
Dumping	None or light Local or widespread	Moderate Widespread	Heavy Widespread
Encroachment	None or light Local or widespread	Moderate Widespread	Heavy Widespread
Browse	None or light Local or widespread	Moderate Widespread	Heavy Widespread
Other Impacts	None or light Local or widespread	Moderate Widespread	Heavy Widespread
	· ·		
	Sum of points() / 5 = Ca	tegory Score ()	

Rapid Condition Assessment Methodology (RCAM): Step 2- Calculating the Condition Score

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28 Hungy Hollow 206 206 129 1 13 0 385 792021 12,0000 AM 12,0000 AM Juse Particin 0 0 0 1 Hungy Hollow 29 Successional Wo 181 2.15 0.59 0 19 0 3.54 7112021 8.2500 AM 12.0000 AM Joe Pearson Natale Puckins 0 0 21 Hungy Hollow 30 Plantation 2.01 1.03 1 15 0 3.54 7112021 8.2500 AM 12.0000 AM Joe Pearson Natale Puckins 0 0 0 31 Hungy Hollow 30 Plantation 2.01 1.03 1 1 0 3.84 7112021 9.2500 AM 12.0000 AM Joe Pearson Natale Puckins 0 0 0 34 Hungy Hollow 32 Treed Swamp 163 0.4 0 1 0 3.88 7112021 9.500 AM 12.0000 AM Joe Pearson Natale Puckins 0 0 0 0 0 0 0 0 0 0 0 <	28 Hunary Hollow	26 Successiona	al Wo 1.55	1.88	0.89	0	11	0	3.54	7/9/2021	1:20:00 PM	12:00:00 AM Joe Pearson	Natalie Rudkins	0	0	
11 Hungry Hollow 29 Successional Wo 161 215 0.59 0 19 0 3.54 7/192021 9.2500 AMI 120000 AM Joe Pearson Natale Fluckins 0 0 0 21 Hungry Hollow 30 Plantation 2.01 1.03 1 15 0 3.54 7/192021 9.2500 AMI 120000 AM Joe Pearson Natale Fluckins 0 0 0 31 Hungry Hollow 33 Meadow Marsh 1.43 1.43 1.4 1 0 3.64 7/192021 9.500 AMI 120000 AM Joe Pearson Natale Fluckins 0 0 0 35 Hungry Hollow 33 Successional Wo 100 1.4 0 3.84 7/192021 9.500 AMI 120000 AM Joe Pearson Natale Fluckins 0	29 Hungry Hollow	27 Succession	al Wo 2.05	2.05	1.29	1	1.3	0	3.85	7/9/2021	12:00:00 AM	12:00:00 AM Joe Pearson	Natalie Rudkins	0	0	
12 Hungry Hollow 30 Plantation 201 103 1 15 0 354 7/19/2021 92/000 AM 12/000 AM 0e Pearson Natale Fluckins 0 0 0 38 Hungry Hollow 32 Treed Swamp 163 149 0 1 0 368 7/19/2021 92/500 AM 12/000 AM Joe Pearson Natale Fluckins 0 0 0 38 Hungry Hollow 33 Successional Wo 281 144 0.59 0 15 0 3.31 7/19/2021 92/500 AM 12/000 AM Joe Pearson Natale Fluckins 0 0 0 38 Hungry Hollow 33 Successional Wo 281 214 232 3 17 0 3.7 7/19/2021 10/000 AM 0 Natale Fluckins 0 <th>30 Hungry Hollow</th> <th>28 Mixed Fores</th> <th>st 3.52</th> <th>2.18</th> <th>6.54</th> <th>5</th> <th>1.4</th> <th>0</th> <th>4.15</th> <th>7/15/2021</th> <th>7:45:00 AM</th> <th>12:00:00 AM Joe Pearson</th> <th>Natalie Rudkins</th> <th>0</th> <th>0</th> <th></th>	30 Hungry Hollow	28 Mixed Fores	st 3.52	2.18	6.54	5	1.4	0	4.15	7/15/2021	7:45:00 AM	12:00:00 AM Joe Pearson	Natalie Rudkins	0	0	
33 Hungry Hollow 31 Meadow Marsh 1.43 1.43 1 0.6 2.59 7/17/2021 9.2500 AM 120000 AM lose Pearson Natale Rudkins 0 0 33 Hungry Hollow 32 Treed Swamp 160 196 0.4 0 1 0 3.88 7/17/2021 9.5000 AM 12.0000 AM lose Pearson Natale Rudkins 0 0 0 35 Hungry Hollow 33 Successional Wo 2.81 2.14 2.32 3 1.7 0 3.73 7/17/2021 10.0000 AM lose Pearson Natale Rudkins 0 0 0 36 Hungry Hollow 35 Mixed Forest 1.55 1.88 0.57 0 0.83 5.717/2021 10.0500 AM 12.0000 AM lose Pearson Natale Rudkins 0 0 0 0 39 Hungry Hollow 36 Mixed Forest 1.65 0.81 0.41 0 1.7 0 3.85 7/17/2021 10.6500 AM 12.0000 AM lose Pearson Natale Rudkins 0 0	31 Hungry Hollow	29 Succession	al Wo 1.81	2.15	0.59	0	1.9	0	3.54	7/15/2021	8:25:00 AM	12:00:00 AM Joe Pearson	Natalie Rudkins	0	0	
34 Hungry Hollow 32 Treed Swamp 163 196 0.4 0 1 0 388 7/192021 9500 AM 12000 AM bee Pearson Natalie Fluckins 0 0 0 36 Hungry Hollow 33 Successional Wo 2.81 2.14 2.32 3 17 0 3.73 7/19/2021 100.00 AM De Pearson Natalie Fluckins 0	32 Hungry Hollow	30 Plantation	2.01	2.01	1.03	1	1.5	0	3.54	7/15/2021	9:00:00 AM	12:00:00 AM Joe Pearson	Natalie Rudkins	0	0	
35 Hungry Hollow 33 Successional Wo 160 134 0.59 0 15 0 3.31 7/19/2021 95/000 AMI 12/0000 AMI de Pearson Natalie Rudkins 0 0 36 Hungry Hollow 33 Successional Wo 261 214 2.32 3 17 0 3.73 7/19/2021 10.0000 AMI de Pearson Natalie Rudkins 0 0 0 37 Hungry Hollow 35 Mixed Forest 2.02 1.5 1 1.2 0 3.85 7/19/2021 10.0500 AM 12.0000 AM de Pearson Natalie Rudkins 0 0 0 38 Hungry Hollow 38 Mixed Forest 1.55 1.88 0.677 0 3.85 7/19/2021 10.45000 AM 12.0000 AM de Pearson Natalie Rudkins 0	33 Hungry Hollow	31 Meadow Mar	rsh 1.43	1.43	1	1	0.6	0	2.69	7/15/2021	9:25:00 AM	12:00:00 AM Joe Pearson	Natalie Rudkins	0	0	
36 Hungry Hollow 34 Successional Wo 2.81 2.14 2.32 3 17 0 3.73 7/192021 10.000.00 AM 12.000.0AM bee Pearson Natale Fuckins 0 0 0 0 37 Hungry Hollow 36 Mixed Forest 1.55 1.89 0.57 0 0.6 0 3.85 7/192021 10.500.0AM 12.000.0AM bee Pearson Natale Fuckins 0	34 Hungry Hollow	32 Treed Swam	np 1.63	1.96	0.4	0	1	0	3.88	7/15/2021	9:35:00 AM	12:00:00 AM Joe Pearson	Natalie Rudkins	0	0	
37 Hungry Hollow 36 Mixed Forest 155 188 0.67 0 0.8 0 328 7/172021 10.1500 AM 12.0000 AM Joe Pearson 0<	35 Hungry Hollow	33 Succession	al Wo 1.60	1.94	0.59	0	1.5	0	3.31	7/15/2021	9:50:00 AM	12:00:00 AM Joe Pearson	Natalie Rudkins	0	0	
36 Hungry Hollow 36 Mixed Forest 2.02 15 1 12 0 385 7//19/2021 10.03/00 AM 12/00.00 AM Dee Pearson 39 Hungry Hollow 37 Mixed Forest 1.95 2.18 0.41 0 17 0 3.95 7//19/2021 10.05/00 AM 12/00.00 AM Use Pearson Dec Pearson 0	36 Hungry Hollow	34 Successiona	al Wo 2.81	2.14	2.32	3	17	0	3.73	7/15/2021	10:00:00 AM	12:00:00 AM Joe Pearson	Natalie Rudkins	0	0	
39 Hungry Hollow 37 Mixed Forest 185 218 0.41 0 17 0 385 7/15/2021 10.45.00 AM 12.000 AM Joe Pearson Database 0 40 Hungry Hollow 33 Treed Swamp 172 205 0.06 0 12 0 3.96 7/15/2021 10.45.00 AM 12.000 AM Joe Pearson Database 0 0 0 41 Hungry Hollow 33 Mixed Forest 161 194 0.877 0 0.12 0 3.96 7/15/2021 12.500 AM Dava Pearson Databases 0 0 0 42 Hungry Hollow 49 Successional Wo 2.63 196 2.94 3 12 0 3.89 7/15/2021 12.2500 PM 12.0000 AM Joe Pearson Natale Rudkins 0	37 Hungry Hollow	35 Mixed Fores	st 1.55	1.88	0.57	0	0.8	0		7/15/2021	10:15:00 AM		A Late Die Physiolitie e	0	0	
40 Hungry Hollow 38 Treed Swamp 172 2.05 0.06 0 12 0 3.86 7//15/2021 11.05.00 AM 12.00.00 AM Joe Pearson Database 0 41 Hungry Hollow 39 Mixed Forest 1.61 1.94 0.67 0 7.7 0 4.12 7//212021 11.05.00 AM 12.00.00 AM Joe Pearson Database 0 0 42 Hungry Hollow 40 Successional Wo 2.63 196 2.24 3 12 0 3.96 7//15/2021 11.000 AM 12.00.00 AM Joe Pearson Natalie Fundkins 0 0 0 41 Hungry Hollow 41 Meadow Marsh 1.11 1.45 0.69 0 0.88 0 2.54 7//15/2021 11.200.00 AM Joe Pearson Natalie Fundkins 0 0 0 44 Hungry Hollow 43 Mixed Forest 3.0 1.64 0.92 0 0.83 7///15/2021 12.250.00 FM 12.00.00 AM Joe Pearson Natalie Fundkins 0 0 0 44 Hungry Hollow 43 Mixed Forest 2.37 2.37 10.2	38 Hungry Hollow	36 Mixed Fores	st 2.02	2.02	1.5	1	1.2	0	3.85	7/15/2021	10:35:00 AM	12:00:00 AM Joe Pearson		_	0	
41 Hungry Hollow 39 Mixed Forest 161 194 0.87 0 0.7 0 4.12 72/2021 1250.0PM 120.000 AM Use Pearson 0 42 Hungry Hollow 40 Successional Wo 2.63 195 2.94 3 1.2 0 3.95 71/2021 114.000 AM Use Pearson Natale Fluidkins 0 0 0 43 43 Hungry Hollow 41 Meadow Marsh 1.11 1.45 0.69 0 2.54 71/5/2021 12.250.0PM 12.0000 AM Use Pearson Natale Fluidkins 0 0 0 44 44 Hungry Hollow 42 Meadow 3.0 1.64 0.92 0 0.6 0 3.31 71/5/2021 12.250.0PM 12.0000 AM Use Pearson Natale Fluidkins 0 <	39 Hungry Hollow	37 Mixed Fores	st 1.85	2.18	0.41	0	17	0	3.85	7/15/2021	10:45:00 AM	12:00:00 AM Joe Pearson	Dat	ahaa	0	
41 Hungry Hollow 39 Mixed Forest 161 194 0.87 0 0.7 0 4.12 72/2021 1250.0PM 120.000 AM Use Pearson 0 42 Hungry Hollow 40 Successional Wo 2.63 195 2.94 3 1.2 0 3.95 71/2021 114.000 AM Use Pearson Natale Fluidkins 0 0 0 43 43 Hungry Hollow 41 Meadow Marsh 1.11 1.45 0.69 0 2.54 71/5/2021 12.250.0PM 12.0000 AM Use Pearson Natale Fluidkins 0 0 0 44 44 Hungry Hollow 42 Meadow 3.0 1.64 0.92 0 0.6 0 3.31 71/5/2021 12.250.0PM 12.0000 AM Use Pearson Natale Fluidkins 0 <	40 Hungry Hollow	38 Treed Swam	np 1.72	2.05	0.06	0	1.2	0	3.96	7/15/2021	11:05:00 AM	12:00:00 AM Joe Pearson	Dat	anas	e o	
43 Hungry-Hollow 41 Meadow Marsh 111 145 0.69 0 0.8 0 2.54 7/15/2021 12/25/00 PM 12/00/0.AM Joe Pearson Natalie Fluckins 0 0 0 0 44 Hungry-Hollow 42 Meadow 43 M3 7/15/2021 12/30/00 AM Joe Pearson Natalie Fluckins 0	41 Hungry Hollow	39 Mixed Fores	st 1.61	1.94	0.87	0	0.7	0	4.12	7/21/2021	1:25:00 PM	12:00:00 AM Joe Pearson			0	
44 Hungry Hollow 42 Meadow 130 164 0.92 0 0.6 0 3.31 7/H92021 12.30:00 PM 12:00:00 AM Joe Pearson Natalie Rudkins 0 0 0 45 Hungry Hollow 43 Mixed Forest 2.37 2.37 102 1 15 0 4.62 7/H92021 12:00:00 AM Joe Pearson Natalie Rudkins 0	42 Hungry Hollow	40 Successiona	al Wo 2.63	1.96	2.94	3	1.2	0	3.69	7/15/2021	11:40:00 AM	12:00:00 AM Joe Pearson	- Halano - Halanino		0	
45 Hunggry Hollow 43 Mixed Forest 2.37 2.37 1.02 1 1.5 0 4.52 7/18/2021 12:50:00 PM 12:00:00 AM Joe Pearson Natalie Rudkins 0 0 0 46 Hunggry Hollow 44 Conferous Forest 132 0 4.46 7/18/2021 12:00:00 AM Joe Pearson Natalie Rudkins 0 0 0 47 Hunggry Hollow 43 Mark 1.77 0.12 0 0.9 3.42 7/18/2021 10:00:00 PM 12:00:00 AM Joe Pearson Natalie Rudkins 0 0 0 1	43 Hungry Hollow	41 Meadow Ma		1.45		0	0.8	0	2.54	7/15/2021	12:25:00 PM	12:00:00 AM Joe Pearson	Natalie Rudkins	0	0	
46 Hungry Hollow 44 Coniferous Forest 132 2.25 0.4 0 13 0 4.46 7/15/2021 1:30:00 PM 12:00:00 AM Joe Pearson Natalie Rudkins 0 0 0 47 Hungry Hollow 45 Meadow Marsh 1.44 1.77 0.12 0 0.9 3.42 7/15/2021 1:00:00 PM 12:00:00 AM Joe Pearson Natalie Rudkins 0 0 0 0	44 Hungry Hollow	42 Meadow	1.30	1.64	0.92	0	0.6	0	3.31	7/15/2021	12:30:00 PM	12:00:00 AM Joe Pearson	Natalie Rudkins	0	0	
47 Hungry Hollow 45 Meadow Marsh 144 177 0.12 0 0.9 3.42 7/19/2021 1:00:00 PM 12:00:00 AM Joe Pearson Natalie Rudkins 0 0 0 0	45 Hungry Hollow	43 Mixed Fores	st 2.37	2.37	1.02	1	1.5	0	4.62		12:50:00 PM	12:00:00 AM Joe Pearson		0	0	
	46 Hungry Hollow	44 Coniferous F	Forest 1.92	2.25	0.4	0	1.3	0	4.46	7/15/2021	1:30:00 PM	12:00:00 AM Joe Pearson	Natalie Rudkins	0	0	
Global Parameters Score Output MaxScore Site Site 1 Site 2 Site 3 Site 4 Site 5 Site 6 Site 7 Site 8 Site 9 Site 10 Site 11 Site 12 Site 13 Sit +	47 Hungry Hollow	45 Meadow Ma	rsh 1.44	1.77	0.12	0	0.9	0	3.42	7/15/2021	1:00:00 PM	12:00:00 AM Joe Pearson	Natalie Rudkins	0	0) 🔻
		Global Parameters Sco	ore Output Max	Score Site Site 1	Site 2 Site	3 Site 4 1	Site 5 Site 6	Site 7 Si	te 8 Site 9	Site 10	Site 11	Site 12 Site 13	Sit 🕞 💠	4		
				Bitto Bitto						1 5100 10	0.00			·		



How Can It Help

Helps Land & Asset Managers:

- Document assets
- Assess asset condition
- Compare similar assets
- Rank assets
- Prioritize asset for management
- Monitor assets



Street Trees/ Lawn Assessment

- Designed for **quick**, **1-3min assessments** of street trees and manicured lawns
 - Related to level of service, not ecological complexity
 - E.g. manicured lawn as soccer field
 - To flag street trees and lawns that require a comprehensive examination
- Incorporates **indicators of condition from other assessments** (e.g. Ontario Butternut Assessment Guidelines, CVC approaches)

Scorecards: Street Trees

Street Tree Condition Asess	ment													
Site Name: Acton Community	Required Information													
	#: ID Number for each tree. For multi-stemm	ned t	rees, rec	ord an ar	dditional '	letter for	r each ste	əm e.g.	. 1a, 1l	b				
Assessed trees on both sides of														
street between Browns Cres. and	1) SCORE 1 IF ABSENT, 3 IF PRESENT BUT													
Bonnette St.	TREE: Roots= exposed roots? Shoots= prese									1				
Surveyors:	cankers on trunk/ root flare/ holes?; Leaf= sign	is of s	stress on	leaves, lik	ke spots, (discolour	ration/ bro	wning,	etc?					
CVC	2) Crown= % of dead crown: Score 1 point if C	Crown= % of dead crown: Score 1 point if 0-30%; 3 points if 31-60%; 5 points if >60%												
	3) <u>Cond= rounded overall condition score</u>	Cond= rounded overall condition score												
	AUTOCALCULATED	#	Roots	Shoots	Trunk	Leaf	Crown	Cond	Pst	***	DBH	Species Na	at GPS	Notes
l		<u></u>		1		1			[
GPS Unit #:	Pst= populate with X if evidence of pest spec	1 1	1	1 '	1	1								Start north side of Tanners at Browns
1	adults, or white egg sacs)	(1 ¹	.1 1 1	5	5 5	5	ל ו	3	X	X	19.9	Quercus macro	ca 197	Cres. 30% browse by LDD
NHP9		()	+	· · · · · ·	(+	(· '		<u> </u>			-		
	*** = populate with X if:	1 1	1	1 '	1	1								
Date/ Time:	a) Cond score is above 3 or if any categor	1 2	ا <mark>ر ا</mark> ر	1 1	1 1	1 1	1 1	1			9.5	Gymnocladus d	lio 198	s
Dater mile.	b) it is believed that additional assessmen_		+	+ ¹	+	+ ¹		1	├ ──	+	9.5	Gymnociadus d	10 150	1
		1	1	1	1	1			1					
August 13, 2021	Additional Information		'	1 .	1 .	1 .					/			
10:28 - 11:25am (57min)	DBH: diameter at breast height (cm); Species	3	<u> 1</u>	<u>1</u> '	<u> 1</u> '	1	1	1			9.1	Gymnocladus d	lio 199	/
4	Nat: X if non-native species GPS: GPS location/ point number; Notes: add	. 1	1	1	1	1								
4	GPS: GPS location/ point number, Notes: auc	(¹	1	1	1	1	,							
l		4	/ 1 1	1	1 ¹	3	'5	2	X	X	13.8	Quercus rubra	200	LDD
4	Ť	(*		, <u> </u>		1								
4	J	1	1	1	1	1 '								
4	ļ	5	ار ار	1 1	. 1	3	3 3	2	X		14.2	Quercus macro	ca 201	LDD
4	t	+			· · · · ·		+		<u> </u>					
4	J	1	1 1	1	1	1 '								1
4	J	6	ا ا	1 1	1 1	1 1	1	1	1		9.8	Syringa reticu >	K 202	, I
4	÷	–	+	·'	· · · ·	· · · ·	+		+1		0.0	oyninga roady y		1

Scorecards: Street Trees

Street Tree Occulition Acc						
Street Tree Condition Ase	Required Information					
Site Name: Acton Community		temmed trees record a	n additional letter for each s	tem e g 1a 1h		
Centre:Tanners Drive/ Queen Stree Assessed trees on both sides of	set. #: ID Number for each use. For mulu-s	emmeu uees, record an		eme.g. ia, ib		
street between Browns Cres, and	1) SCORE 1 IF ABSENT, 3 IF PRESENT	BUT MINOR, 5 IF EVIDE	NT IN MORE THAN TWO LOC	ATIONS ON		
Bonnette St.	TREE: Roots= exposed roots? Shoots=					
Surveyors:				burk on ppour		
сvс						
GPS Unit #:						Notes side of Tanners at Browns browse by LDD
NHP9						
Date/ Time:						
August 13, 2021					and the second second	
10:28 - 11:25am (57min						
10.20 11.20am (or think	Very Good	Good	Fair	Poor	Very Poor	
		0000	l an	1.001	Very i ooi	
	1	2	3	4	5	
		6 1		1 9.8	Syringa reticu X 202	
				3.0	Syringa reticu X 202	

Scorecards: Manicured Lawn

Site Name:	pen Space Condition Assessment Required Information													
Hungry Hollow	#: ID Number for each manicured lawn/ oper	a spar	ce site asse	essed										
		- open		0000										
	Mark with an X if present:													
Surveyors:	Patchy= patchiness of lawn (i.e. patches of e			Flood= e	vidence of	i flooding	/ poor dr	ainag	je?;					
CVC	Litter= pollution/ litter/ dumping?; Depr= de	press	ions?											
	Rank the condition of the lawn from 1 to	5, co	nsidering t	he comb	ined rela	tive cove	er of all i	items	above:					
	1= Very Good (Perfect lawn with little/ no pa	tchine	ess/ discolo	uration/ d	epression	s (i.e. co	/ering <1	10% c	of lawn).					
	Clearly well-maintained); 2= Good (Imperfec													
	lawn. Occasionally maintained); 3= Fair (Pate													
	maintained); 4= Poor (Patchiness/ discoloura						ely main	Itained	d); 5= Ve	ry				
	Poor (Patchiness/ discolouration/ depressi⊂					····								
	Cond= rounded overall condition score										Age			
GPS Unit #: NHP9	AUTOCALCULATED	#	Patchy	Flood	Litter	Depr	Cond	***	Tree	Roots	25		GPS	Notes
	Tree= estimate the relative % tree cover (if							!						
	Roots= (yes/no) exposed roots from trees		'					!						White colver/ plantains covering. Norway maple
Date/ Time:				'										with several gypsy moths. Some minor patchiness
	*** = populate with X if:	60	1	1	l 1'	1	1		<5%	no		no		around soccer field, likely from wear.
July 22, 2021	a) Condiscore is above 3 or if any categ-		· · · ·	<u> </u>	· · ·	· ·		+ 1						
	b) it is believed that additional assessm							!						
	Additional Information							!						
	Age 25: note with X if manicured lawn/ gree			'										Woodchips cover most of area. Little lawn
		61	4	1	1	1	2		<5%	no		no		remains. Dog park
		0.			· · ·		_	+	-070					
								1						
			'					!						Dandelions, some plantains. Clippings returned
		62			_ '		4		<5%					
		61	1 1	1 1	1 1	1 1		<u> </u>	1<5%	ino i		no		after mowing.

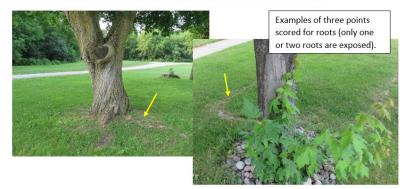
Scorecards: Manicured Lawn

	pen Space Condition As						
Site Name:	Required Information						
Hungry Hollow	#: ID Number for eac	ch manicured lawn/ open space si	te assessed				
	Mark with an X if pr						
Surveyors:	Patchy= patchiness	of lawn (i.e. patches of dirt, brown	ing?); Flood= evidence of	flooding/ poor drainage?;			
CVC							
GPS Unit #:							Notes
NHP9					Children and	and the second	
						and the second	is covering. Norway maple
Date/ Time:							oths. Some minor patchiness
July 22, 2021		Very Good	Good	Fair	Poor	Very Poor	ikely from wear.
		1	2	3	4	5	
							st of area. Little lawn
I							
						Dandelions, sor	ne plantains. Clippings returned
		62	4 4 4	1 1 <5%	no no	after mowing.	

Street Trees/ Lawn Assessment: Photo Guides

Exposed Roots

Examples of roots which are uncovered near the base of the tree. These are exposed to damage by trampling and the elements.





Patchiness/ Discoloration of Lawn



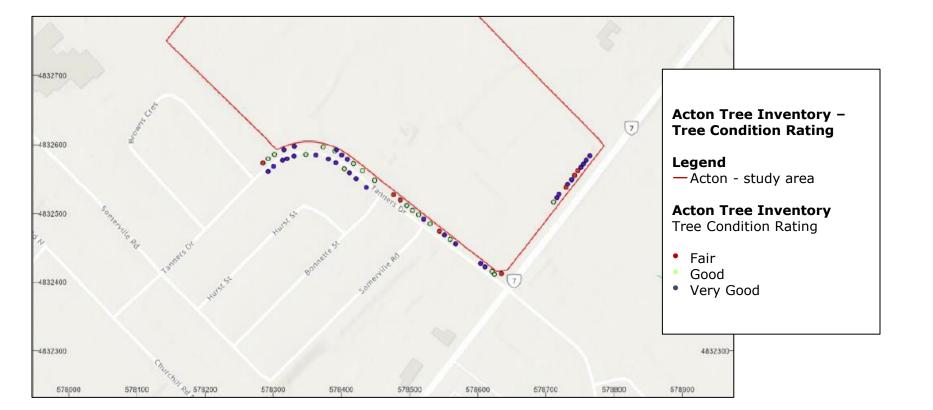
Example of lawn in very good condition. Patchiness and discoloration almost absent.

Example of lawn with minor patchiness and discoloration, in good condition.



Example of lawn in fair condition, where patchiness/discoloration cover 21-50%.

Example Application: Street Trees around Acton Arena



Key Take Away Messages

- Natural assets are important for climate change mitigation
- O. Reg 588 requires that municipalities include natural assets in asset management plans
- Establishing an inventory and assessing condition can help with municipal natural asset management
- This information will feed into next steps regarding level of service and life cycle costing

2022 STEP Webinar Series

- March 31 Overview of the Ecological Land Classification System
- April 7 Natural Asset Inventory and Condition Assessment (Part 1)
- April 28 Fish and Wildlife Passage at Bridges and Culverts
- May 5 Level of Service, Valuation and Life-Cycle Costing for Natural Assets (Part 2)
- June 2 Climate Considerations for Management of Natural Features
- June 23 CVC Ecosystem Offsetting Guidelines
- September 8 Building Business Case for Natural Assets (Part 3)
- September 29 Biodiversity Matters in Managing Natural Assets

https://sustainabletechnologies.ca/events/2022-webinar-series/

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