CLIMATE CAUCUS

Managing Natural Assets

April 28, 2022

Agenda

1. PROJECT OVERVIEW
2. NATURAL ASSET MANAGEMENT
3. NATURAL ASSET MYTHS
4. NATURAL ASSET VALUATION
5. THIRD PARTY ASSISTANCE
6. CHALLENGES
7. SMALL / RURAL COMMUNITIES

There is no standardized way to manage your natural assets

And it will be near impossible to do so...

here is why.

Let's break it down...

Natural Assets

Asset Management

Natural Assets

GREEN INFRASTRUCTURE (GI)

Nature-based Solutions (NBS) / Nature-based Climate Solutions

Natural Infrastructure (NI)

Low Impact Development (LID)

NATURAL ASSETS*
- Wetlands
- Forests
- Parks
- Meadows
- Lawns and gardens
- Soil

ENHANCED ASSETS*
- Rain gardens
- Green roofs and walls
- Bioswales
- Urban trees
- Naturalized stormwater ponds

ENGINEERED ASSETS*
- Permeable pavement
- Rain barrels
- Cisterns
- Perforated pipes
- Infiltration trenches

GREY INFRASTRUCTURE*
- Bridges
- Roads
- Parking lots
- Culverts
- Pipes

Asset Management Planning (AMP)

Why?

To make good decisions, you need accurate data.

Asset Management helps communities manage municipal infrastructure assets and make better investment decisions.

FCM states:

Asset Management Planning (AMP) outlines how assets will be managed in one or more service areas.

Identifies how assets will be maintained and renewed, and the cost, level of service and risk considerations in each service area.

Natural Assets + Asset Management

= Natural Asset Management

Natural Asset Management Myths

1. Nature is priceless so it should not be monetized
2. Carbon sequestration is the main driver
3. PSAB prevents natural asset inclusion into asset management
4. Funders require specific valuation methods
5. Built assets always have standardized methods

Basic Steps for Natural Asset Management

1. Inventory / list natural assets
2. Identify who has jurisdiction/ ownership of these assets and how they are managed
3. Condition Assessment: how would you describe the current condition? Identify risks - what are some risks these assets face? Prioritize them.
4. Identify levels of service these assets support
5. Estimate a value for your natural assets
6. Integrate into Asset Management Plan

Inventory of Natural Assets

Steps:

1. Identify the key natural assets your community values, and wants to protect
2. Measure "how much"
   e.g. how many hectares of urban forest?

Considerations:

1. Collaborate with key community stakeholders to identify natural assets that matters
2. Option to focus on one or many asset classes;
   e.g. urban forests or street trees or both

Condition Assessment

Steps:

1. Identify a few key metrics to assess condition and any need for restoration.
2. Set up a simple system for annual monitoring for maintenance

Considerations:

1. Choose a method that provides the information but affordable
2. Metrics that can be updated regularly and mirrors your AMP

Levels of Service (LOS)

The expected performance of assets: the quantity, quality, and reliability of services that a natural (or built) asset should provide to the community

Green Infrastructure ONTARIO COALITION

Toronto and Region Conservation Authority

Services Reviews: Natural Assets

Service	Assets
Recreation	Watercourses, forests, parks
Stormwater management	Wetlands, watercourses, forests
Biodiversity	Forests, wetlands, watercourses

Green Infrastructure Ontario Coalition

Toronto and Region Conservation Authority

Levels of Service – Basic Steps

- Identify Services and Assets
- Describe Current Levels of Service
- Identify Performance Measures
- Determine Desired Levels of Service
- Ongoing review, updates and improvements

REMEMBER!

This is long-term work and consistent metrics are more important than level of detail.

Knowing what you have - through inventory - is more valuable than valuation of natural assets.

Questions?

Natural Assets Valuation

Natural Assets Valuation

The process of attributing a monetary value to ecosystem services or benefits. The value aims to measure economic benefits or people's preferences for the benefits they obtain from ecosystem services.

Green Infrastructure
ONTARIO COALITION

Toronto and Region Conservation Authority

Key Points:

Valuation is NOT essential; process is resource intensive.

True value of nature is difficult / impossible to quantify

So why do it?

Having numerical attachment helps with the 'business case' / social buy-in factor for natural assets

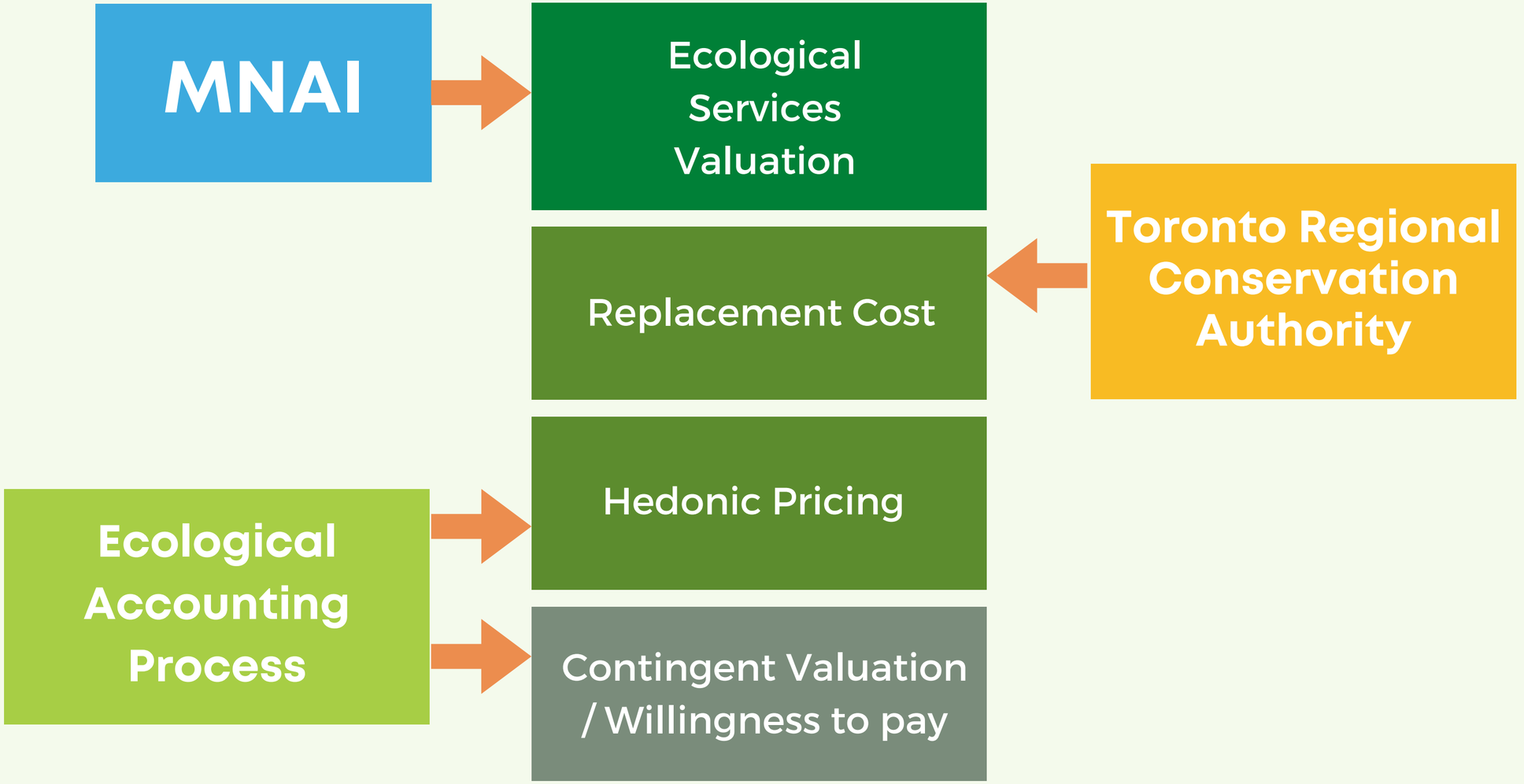
Natural Asset Valuation Quick Starts

1. **Identify a champion**
   (elected, staff, community)
2. **Aim for regional collaboration**
   (e.g. a watershed impacts multiple jurisdictions)
3. **Identify a purpose for valuation**
   (e.g. to get initial buy-in vs integrating into existing Asset Management Plan)
4. **Identify best valuation approach**
   (which approach will address your purpose)
5. **Integrate valuation into asset management plan** (e.g. financial strategy)

Valuation Method	Ecological Value	Socio-Cultural Value	Economic Value
Definition	Capacity of ecosystems to provide goods and services and the limits of sustainable use determined by ecological criteria: integrity, resilience, resistance	Social values determine the importance of natural ecosystems and their functions in relation to human society. For example values such as: physical & mental health education, cultural diversity and identity (heritage value), freedom and spiratual values	Direct Market Valuation Indirect Market Valuation Contigent Valuation Group Valuation

Economic Value	Definition	
Direct Market Valuation	Exchange value that ecosystem services have in trade	e.g. water filtration plant = $6 billion; watershed = $6 billion
Indirect Market Valuation	Avoided Cost; Replacement Cost	Factor Income; Travel Cost; Hedonic Pricing
Contingent Valuation / Willingness to pay	Price consumer willing to pay for the service	e.g. survey on willingness to pay to increase water quality of stream
Group Valuation	group deliberation on the value of natural asset	e.g. an open public debate

Economic Value	Indirect Market Valuation	Definition	
Level of Service	Avoided Cost	value = costs community would have incurred in absence of service	e.g. flood control = avoided property damage costs
	Replacement Cost	estimates the value of replacing ecosystem with enhanced / engineered assets	e.g. stormwater management that can be replaced with engineered assets
	Hedonic Pricing	value reflects the price people will pay for associated goods	e.g. the valuation of a wetland equates to the property value surrounding
	Factor Income	value reflects the enhanced income of dependant professions	e.g. improved water quality = more fish for commercial fisheries
	Travel Cost	value = travel costs to the ecosystem	e.g. costs to travel to a lake for boating / swimming activity


MNAI
Ecological Services Valuation
Replacement Cost
Toronto Regional Conservation Authority
Ecological Accounting Process
Hedonic Pricing
Contingent Valuation / Willingness to pay

MNAI

i-tree

FCM

Third-Party Assistance

Toronto Regional Conservation Authority

Ecological Accounting Practice

Private Consultants

- political buy-in
- produce data & resources
- funding

	MNAI	Toronto Regional Conservation Authority	Ecological Accounting Process
Valuation Method	Ecological Services Valuation	Replacement Cost	Willingness to pay & Hedonic Pricing
Common Application	Stormwater Management	Urban Canopy, Stormwater Management	natural commons:wetlands, ponds, streams & riparian areas
Costs	up to $100,000 contingent on grants	Varies by in house staff time	$25,000 in pilot or varies by staff time
Best used for:	Public buy-in; no in house capacity	Integration into current Asset Management Plan	Community collaboration

	MNAI	Toronto Regional Conservation Authority	Ecological Accounting Process
Advantages	• Thorough • Includes all ecosystem values • Business case for protecting natural assets	• Asset focused - easy integration into Asset Management Plan • Fits into long-term operational planning easier	• Straightforward - application of BC Property Assessment • Community Collaboration • Easy to update
Challenges	• Costly • Not very replicable • Often done by contractors not within the municipal staff	• Leaves out ecological values • Challenging to estimate hypothetical built costs	• Difficult to apply the more urbanized the community is

Questions?

Challenges

1. Private ownership of lands
2. Overlapping public land authorities
3. Competing interests of different local jurisdictions
4. Capacity of staff time and funding
5. The confusing range of valuation methods

Key Considerations: Small / Rural Local Governments

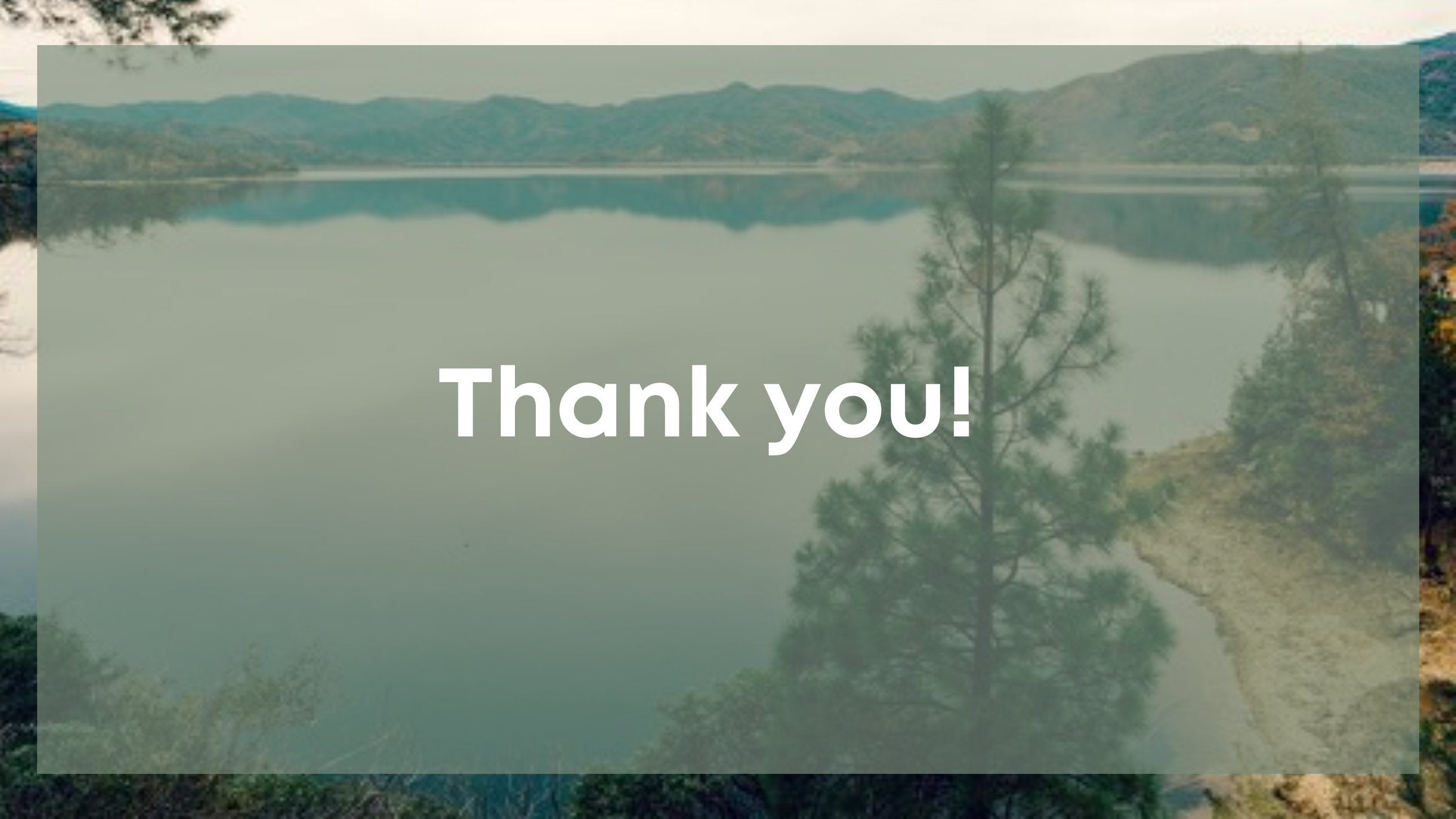
1. Third-party assistance is beneficial, not necessary
2. Pick one asset and a just few metrics
3. Use a simple valuation system
4. Conduct qualitative assessments
5. Urban Canopy can be an easy entry point

Future Webinars:

Thursday, May 12 (11 am PT/ 2pm ET): Ecological Accounting Process

Friday, June 3 (10 am PT / 1 pm ET): Indigenous Panel: Managing Natural Assets

Thursday, June 16 (10am PT / 1 pm ET): Valuing Urban Canopies - London, ON and York Region, ON


Thank you!