



Natural Asset Valuation: Information Sheet

A part of the Managing Natural Assets Handbook

Table of Contents

1. [Key Takeaways](#)
2. [Why value our natural assets?](#)
3. [Challenges of Natural Asset Valuation](#)
4. [Four Questions To Help You Start](#)
5. [Concept Clarification](#)
6. [Possible Initiatives](#)
 - a. [Ecosystem Services Valuation](#)
 - b. [Asset Management Plan Value](#)
7. [Natural Asset Valuation Myths](#)

Key Takeaways

- Natural Asset Valuation creates a **business case for nature** and can help promote social buy-in for the protection of the natural assets. We can't put a price on nature, but systematic valuation does play a key role in protecting natural assets.



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- Valuation can help make it easier to **integrate natural assets into your local government's Asset Management Plan and ensure recognition and adequate budgets** for restoration, operations and maintenance.
- Valuation is not the only focus of Natural Asset Management. Because valuation can be resource intensive, having an understanding of the [inventory and condition assessment of natural assets](#) is important. However a complete inventory is not a prerequisite to getting started on valuation.
- There are many different methods to value natural assets.
 - **The type of method used should depend on the purpose / use of the valuation - this is the most important consideration.**
 - Consistency year to year is very important for meaningful data, so **sometimes the best answer is to simply pick a method you can maintain, and stick with it.**

Why value our natural assets?

We are talking about monetary valuation here. However, valuation of natural assets can also be either an ecological valuation (such as its increase of ecosystem goods production) and a socio-cultural value (e.g. health and wellness benefits).

The purpose of assigning a monetary value to natural assets is to inform decisions about service delivery, planning, engineering, operations, maintenance, and financial management. Specifically, having a numerical attachment to natural assets can help local governments make the business case for protecting natural assets and create a social buy-in for natural assets. This is key when development decisions arise.



Challenges of Natural Asset Valuation

1. Confusing discourse on natural assets valuation and myths surrounding it. (Please check out our **natural asset valuation myths** below).
2. Overlapping public land authorities, private ownership of lands and competing interests of different local jurisdictions
3. Capacity of staff time and funding
4. Deciding where to start the process of natural asset valuation.
5. Estimates usually reflect the minimum value of an asset, e.g. an estimate of an asset's worth based on the cost of infrastructure that would replace **some** of the services provided by the asset.
6. Intangible or aesthetic values, or the value attributed to long-term benefits, is incalculable.
7. Valuations based on willingness to pay can suffer from ignorance and lack of understanding of the natural environment (e.g. a creek deemed 'ugly' by the community).

Four Questions To Help You Start

1. **Why are you valuing your natural assets?**
 - a. Identify a purpose!
 - b. Do you want to increase public / political buy-in for natural assets?
 - c. Do you want to integrate your natural assets into your existing Asset Management Plan?
 - d. Do you want to prioritize valuable natural assets in the face of development impacts?
2. **Who can be a champion for valuing your natural assets?**



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- a. The champion can either be an elected member, local government staff, or a community member such as a community group.
3. **Does your natural asset fall within the boundaries of other local governments?**
 - a. Aim for regional collaboration as you can benefit from sharing resources and costs of valuation. Regional collaboration can also minimize the challenges of jurisdictional differences.
4. **What is the best valuation approach to meet your purpose?**
 - a. Listed below are different approaches to meet different purposes for valuation.

Concept Clarification

Asset Management Plan Valuation vs. Ecosystem Service Valuation

Ecosystem services valuation

- Economic Valuation
- Useful for making a business case for protecting and managing green infrastructure
- Does not align with the valuation method used for traditional assets

Asset value for asset management planning

- Current replacement cost
- Asset focused
- Consistent across all assets in an asset management plan

The concept of valuing natural assets can be confusing. In efforts to simplify the terms, many non profits and third party organizations have defined, approached, and marketed natural asset valuations in a variety of ways to local governments, leaving staff confused as to what natural asset valuation means, how to start, and who to approach.



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Often, many third party evaluators focus on valuing natural assets through an **ecosystem services valuation approach**. This approach is helpful to local governments in making a business case for protecting and managing green infrastructure. However, this method does not allow for the natural asset to be integrated into financial strategies / capital plans.

Why can't ecosystem service values be integrated into Asset Management Plans?

Because this approach does not align with the valuation methods used for traditional Asset Management Planning.

Specifically, ecosystem service valuation is a system that is never used for grey assets. Therefore, it does not speak the same accounting language as the traditional asset management planning valuation process.

Ontario has provincial legislation ([O. Reg. 588/17: Asset Management Planning for Municipal Infrastructure](#)) to include green infrastructure into its Asset Management Planning. The inclusion in municipal Asset Management Plans means that the natural assets will need to speak the same language as the rest of the plan. This can be done through the Asset Value for Asset Management Planning approach outlined below.

As seen below, valuation of natural assets is within only the first stage of asset management planning.

For more information see [Integrating Natural Assets into your Asset Management Plan](#) (covers levels of service, life cycle strategy, financial strategy).



Possible Initiatives

Climate Caucus has ranked the following initiatives from beginner to expert, based on Complexity to implement, Staff time & expertise, and Political capital. Please note, these rankings are our own best judgements.

-  Green Square = Beginner
-  Blue Square = Intermediate
-  Black Diamond = Advanced
-  Double Black Diamond = Expert

Ecosystem Services Valuation -

Ecosystem services: the term has been subject to various and contradictory interpretations. For our purposes, we will use the definition as used in the [De Groot et al article](#) - “the capacity of natural processes and components to provide goods and services that satisfy human needs, directly or indirectly”.

- a. Important to note: sometimes a single ecosystem service is the product of two or more processes whereas in other cases a single process contributes to more than one service
- b. For more details see our [Summary of Ecosystem Services Valuation Types](#).



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When to use Ecosystem Service Evaluation

-  the asset is managed and maintained to provide that service
-  resources are available to collect and analyze data
-  consistent and reliable methods are available to quantify - ideally peer-reviewed
-  it is likely that it will be possible to update in the next AMP
-  can be understood by non-experts
-  adds additional value to support management decisions

42

Source: [Green Infrastructure Ontario and Toronto Conservation Authority](#)

Evaluating Ecosystem Services

Advantages	Disadvantages
• Inform management decisions to enhance service delivery • Set targets & measure performance • Track progress & impacts of management actions • Demonstrate benefit of GI	• Expensive: data, software & expertise • Uncertainty in estimates; different methods can result in significantly different quantities and monetary values • Can result in overemphasizing one function over others

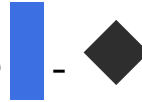
43

See Ecosystem Services Valuation Examples/Case Studies [Here](#)



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A Part of [The Managing Natural Assets Handbook](#)

Asset Management Plan Value



In comparison to Ecosystem Services Valuation, Asset Management Plan Value, also called **Current Replacement Cost** value, aligns more closely to traditional Asset Management Planning for grey infrastructure. To understand how, see [Integrating Natural Assets into Asset Management Plans](#). Due to the need to speak the same language as traditional AMP, the valuation process of natural assets will also need to be similar. Why?

PSAB 3150 vs. Asset Management Plan Valuation

PSAB 3150

Public Sector Accounting Board Handbook, Section 3150 – Tangible Capital Assets (TCAs)

- Valuation of assets for financial statements
- TCAs = historical cost of asset minus accumulated depreciation/amortization
- Restricts the inclusion of natural assets as TCAs

Asset Value for Asset Management Planning

- Current replacement cost, used for financial planning
- Should include any asset with a role in service delivery and requires deliberate management, whether they are TCAs under PSAB 3150 or not.

14

Source: [Asset Management Ontario – TRCA, GIO](#)

The Public Sector Accounting Board (PSAB) have set standards that trend toward stronger policy implementation of asset management in local governments. The accounting standards are authoritative standards for both financial accounting and reporting.



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A Part of [The Managing Natural Assets Handbook](#)

These accounting standards specify how the financial statements of public sector entities must recognize, measure, present, and disclose transactions and other events. As a result, the PSAB has firmly defined what is considered a ‘tangible capital asset’. However, **that does not preclude local governments from including valuations of natural assets in their asset management plans** as these are distinct from financial statements. For more information, click here: [PSAB SECTION 3150](#)

The term replacement cost valuation has been used in different ways. What does it mean here?

	Ecosystem Services Valuation	Asset Management Plan Valuation
Definition	The value of service provided by the natural asset based on the cost of engineered assets that would be required to provide some of the same services.	An accounting term meaning: The amount of money a business must currently spend to replace an essential asset. Given the cost of replacing the asset, a capital budget to plan for both future asset purchases and how to maintain the asset is created. In Natural Asset Valuation it means: The cost the City would incur to completely replace a municipal infrastructure asset, at a selected point in time, at which a similar level of service would be provided.
Third Party Affiliation Examples	MNAI	TRCA



Examples	Valuation of natural assets that provide the service of stormwater management. The annual costs of maintaining and implementing engineered assets is the value of the natural asset.	The replacement value estimate that 3 young trees are needed to replace 1 mature tree.. The replacement cost is the cost of purchasing, planting, and the initial maintenance of those 3 trees. In urban forests, the replacement cost is based on the hectares of woodland coverage and tree size .
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Note that MNAI also calculates a replacement cost but it is an economic valuation, a very different methodology from the accounting process of AMP.

Note also that EAP calculates a proxy replacement cost using assessed property values in shoreline setback areas. Again, this is very different from AMP standards, but could provide a quick method for smaller communities lacking resources. See [Managing Natural Assets in Small/ Rural Communities](#).

See Asset Management Plan Value Examples/Case Studies [Here](#)



Natural Asset Valuation Myths

Myth	Response
Nature is priceless so shouldn't be monetized. There is great discomfort, especially among many First Nations with monetizing nature, putting a price on something that is priceless.	• Valuation is not the same as monetization as there is no intent that this value encompasses every aspect of a natural asset. • Even when we use the term “replacement cost”, we never assume that we can replace nature, only that we can estimate the cost of a built asset that would replace SOME of the same services (eg, flood mitigation). • if we don't assign a valuation, the value is essentially zero in asset management and key development and zoning decisions. • We still need to recognize that many aspects of natural assets can only be valued qualitatively, for example, cultural and heritage values, and these need to be highlighted.



Carbon sequestration is the main driver of natural asset valuation. Some local governments have identified natural asset protection as a means to sequester carbon. Some Indigenous groups have pushed back against this labeling use of natural assets for carbon sequestration as a license to keep on polluting.	• Natural assets can sequester carbon, but the impact on local government GHGs is minimal compared to initiatives to reduce carbon pollution from buildings, transport and waste. • Climate Caucus sees natural assets as having much greater value in adaptation, e.g. to reduce floods and urban heat island effects, and provide many co-benefits such as access to nature and improved health.
We will never be able to develop a standardized approach to valuation of natural assets as is the case for built assets. Concerns are often expressed that the valuation of natural assets is so inconsistent and unclear compared to built assets, that there is no point undertaking this work until some national standard is developed.	• In fact, valuation of built assets varies widely among local governments, except perhaps in a few areas like the replacement cost of elements such as water pipes. • Eventually there may be standardized approaches to valuing natural assets, but the lack of standards should not hold us back, and how each natural asset class is valued will inevitably vary significantly. We do not see national standardization as a high priority. • Most important is to do the valuation consistency year after year WITHIN your local government.
PSAB rules means we can't include natural assets in asset management systems.	• PSAB rules apply only to financial statements; they do not preclude



At present PSAB (the Public Services Accounting Board) does not allow natural assets to be included in financial statements as tangible capital assets, so many conclude that we can't do any valuation for this asset class.	internal valuation for asset management systems in local government. • Many local governments are already valuing natural assets and successfully integrating these into their asset management systems.
This work has to cost a lot and involve a lot of staff time. There is a mistaken assumption that to do this work local governments must undertake a very thorough natural asset inventory and condition assessment, and then undertake detailed modeling of ecosystem services and capital values.	• While some local governments have undertaken studies costing over \$100,000, especially for detailed stormwater modeling and asset valuation, less costly analyses can still be very valuable. • Starting with a detailed, costly natural asset inventory is not essential; smaller local governments can easily identify one or two key natural asset classes, for example, a single wetland or their urban tree canopy, and focus there. • Other local governments identified in the case studies here are also very willing to share the in-house techniques that they have developed . There is no need to start from scratch. • Counts (eg. of tree canopy) can be done in a few areas and extrapolation can be used to get a good total estimate. • Condition assessments can be, and usually are, qualitative unlike quantitative valuations.



	• The focus can be on ecosystem services OR capital replacement costs, depending on your goal. • The work can start small and build a little each year - any work in this area increases awareness among council, staff and the public.
You need an expert on staff to undertake this work. Lack of expertise among staff is often cited as an insurmountable barrier.	• Which staff undertake this work depends primarily on where you can find someone to champion the cause - your CFO, a planner, or engineering staff - but be sure to involve whoever is responsible for your asset management system • There is expert advice available from MNAI, TRCA, and GIO and some work can be contracted out. • Community support, e.g. support from stewardship groups can supplement limited staff resources.
Funders require specific valuation methods Concerns are often expressed that local governments need to use specific valuation methods that will satisfy funders.	• Funders are not requiring this level of detail. • Some are, however, requiring that local governments have an asset management plan and include natural assets in this plan.