

An Introduction to the Ecological Accounting Process (EAP)



Did you know that looking through the “worth lens” leads to a fundamental shift in philosophy regarding how to value the “water balance services” provided by natural assets?

What is EAP?

The ecological accounting process (EAP) provides metrics that enable communities to appreciate the worth of natural assets. These resources provide numerous public benefits in the form of ecological services. EAP also calculates the dollar value of the land occupied by the **natural commons**, thus providing a basis for budgeting maintenance and enhancement expenditures. The natural commons has a corollary - the **constructed commons**.



10 key messages to remember about EAP and how communities decide how much to invest in creekshed restoration

1. Every urban creekshed comprises a **constructed commons** (roads, utilities, etc.) and a **natural commons** (streams, riparian corridors, etc.). Each commons is a system.
2. Hydrology is the **engine that powers** ecological services. Both hydrology and the ecological services it supports are defined as natural assets.
3. **Impaired hydrology** function results in **diminished** ecological services.
4. The **worth** of a creekshed is a **package of ecological services** made possible by the hydrology. EAP focuses on wetlands, ponds, streams and riparian areas because these natural features provide a number of services desired by communities.
5. EAP deals with **real numbers** which practitioners need to deliver outcomes.
6. EAP uses the **BC Assessment database** regarding land value to calculate the financial value of the **Natural Commons Asset** – that is, the land underlying the stream and adjacent set-back area.
7. View choices through the **worth lens** if the goal is to motivate communities to implement strategies that restore creekshed function.
8. Both the record of expenditures for maintenance and management (**calculation of worth**) and the financial value of the **natural commons asset calculation** provide financial information about ecological (natural) assets that can be included in local government financial planning and **Asset Management Strategies and Plans**.
9. Taking action depends on **what a community thinks** the creekshed is worth.
10. Distinguish between maintenance and management – because *maintenance* is about **preventing or avoiding** degradation, whereas *management* is about **improving** the condition of the ecological asset.

SOURCE: Primer on the Ecological Accounting Process (EAP): A Methodology for Valuing the “Water Balance Services” Provided by Nature, released January 2019

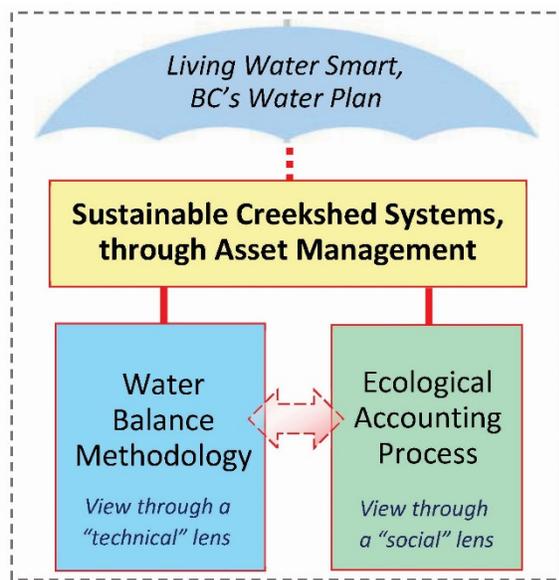
DOWNLOAD: https://waterbucket.ca/rm/wp-content/uploads/sites/5/2019/01/Primer-on-Ecological-Accounting-Process_Jan-2019_low-res.pdf

Why We Need EAP

EAP provides a means to measure the worth and value of ecological services which communities draw or expect to secure from the **natural commons**.

Examples include streams (wetlands, riparian areas, etc.), vegetation and habitat for wildlife – all are features that can enhance parks, trails, green space, urban woodlands, private property, etc. Less familiar ecological services include interception and infiltration of rainwater into the soil, recharge of aquifers (also wells and springs), attenuation of flooding, and conveyance of outflows from storm sewers.

Water pathways, hydrology, is the engine that powers ecological services. Thus, maintenance (prevent degradation) and management (enhancement) of ecological services requires a watershed or creekshed view. **Nature cannot be sliced and diced to suit land development.**



Hydrology is the Engine that Powers Ecological Services

Twin Pillars of Restorative Land Development

Comparison with Constructed Commons:

Communities also rely on the *constructed commons* for many essential services. These resources are familiar as roads, storm-sewers, schools, parks, potable water systems, etc.

In all communities, the **constructed commons** utilizes ecological systems:

- for aesthetic purposes *such as features in parks, along greenways, to support urban forests, etc.; and*
- for infrastructure needs *such as conveyance of outflows from storm sewers, aquifer recharge, attenuation of flooding, interception and infiltration of rainwater, etc.*

The **constructed commons** also benefits from the ambience of ecological services:

property values may be higher for parcels adjacent to streams and natural areas / parks/ trails can be attractions for visitors.

Property taxes, development fees and other revenues pay for the capital, maintenance and operational costs of public services supplied by the *constructed commons*. **Natural commons services lack similar metrics.**

It is not surprising that the worth of ecological services remains obscure in land use practices.

In our history of land use the constructed commons has had complete financial cost accounting (Public Sector Accounting Handbook, section PS3150) as assets valued by purchase price, acquisition and installations costs, and outlays for betterments. The section does not apply to natural resources; "for flora and fauna occurring naturally, or in their natural state, they are by definition a natural resource, or biological resources, and therefore excluded."

How EAP will Help Local Government

EAP addresses this imbalance by focusing on the philosophy that use and conservation of land are equal values and ought to be measured equally. EAP uses the following steps to meet this challenge:

Step 1 - Create a Watershed Profile, one which:

- Reviews the local history of land use and rural / urban development in a watershed or creekshed.
- Describes the hydrological systems of the watershed or creekshed. These water pathways power ecological services.

Step 2 - Use Water Balance Methodology to determine the functioning condition of the hydrology.

Step 3 - Work with community intervenors (active stakeholders) to establish the **Worth** of natural commons services, recognizing that:

- **Worth** focuses on the uses the community makes and expects to make of the ecological services supplied by natural assets.
- **Worth** comprises investment of expertise, time and dollars in *maintenance (prevent degradation)* and *management (enhancement)* of a natural asset such as a stream and the ecological services it provides.

Step 4 - Determine the Commons Value – that is, the dollar value of the land occupied by the natural asset (e.g. stream corridor and set-back areas). This is based on the area defined by provincial regulations and local bylaws. BC Assessment data for values of abutting parcels (land only) is the basis for calculation.

Step 5 - Produce a Proxy Account. Taken together, the EAP calculations of **Worth** and **Commons Value** produce a report that is valid for strategy, budgets, and operating and maintenance targets. Of course, this financial information brings natural assets into the orbit of asset management strategy and planning.

Recognizing Social Contract Principles:

Just as residents and property owners expect constructed commons services to be available and managed, they also expect ecological services to be at hand and endure.

The stewardship sector, manned by local residents, is the caretaker of the natural asset, the stream¹, which provides abundant ecological services in most communities. Stewards are active in maintenance and management projects; their work places a focus on water sustainability. Without water stewards, awareness of the creekshed context and the need for long-range strategy shared by authorities (local government, MOTI, First Nations, provincial / federal ministries) would have no champion.

¹ Stream means the definition in the *Riparian Act Regulations (BC)*.

To learn more about EAP,
download a copy of the Primer at:

<https://waterbucket.ca/rm/wp-content/uploads/sites/5/2019/01/Primer-on-Ecological-Accounting-Process-Jan-2019-low-res.pdf>

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