

ANNOUNCEMENT:**Partnership for Water Sustainability publishes Primer to support vision for “Sustainable Watershed Systems, through Asset Management”**

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Released in September 2016, *Sustainable Watershed Systems: Primer on Application of Ecosystem-based Understanding in the Georgia Basin* is written in a magazine-style to appeal to technical and non-technical readers alike. TO DOWNLOAD A COPY, VISIT:

http://waterbucket.ca/rm/files/2016/09/Primer-on-Application-of-Ecosystem-based-Understanding_Sept-2016.pdf

The Primer serves as a refresher on core science-based concepts that underpin the vision for *Sustainable Watershed Systems, through Asset Management*, a guidance document released by the Partnership for Water Sustainability in November 2015.



A watershed is an integrated system. The need to protect headwater streams and groundwater resources in BC requires that communities expand their view from one that looks at a site in isolation to one that considers all sites, the watershed landscape, streams and foreshores, groundwater aquifers, and so on, as an integrated system.

Ask the Right Questions

Everyone learns about the water balance (water cycle) in elementary school, but by high school most have forgotten what they learned. So what does this mean for communities, the reader might well ask? Consider that: A legacy of community and infrastructure design practices has failed to protect the natural water balance (hydrologic integrity). Failure has financial, level-of-service and life-cycle impacts and implications for local governments, and hence taxpayers. Consequences include expensive fixes.

Local governments are starting to recognize that natural assets have value, ecosystem services have a role in municipal service delivery, and so need to be integrated into their asset management programs. Hence, the sixth in the Beyond the Guidebook Primer Series is written to help multiple audiences – whether elected, technical or stewardship – ask the right questions and ensure that “science-based understanding” is applied properly and effectively to implement practices that restore the hydrologic integrity of watersheds.

Vision: Re-Set the Ecological Baseline

The vision for Sustainable Watershed Systems is the culmination of a building blocks process which cross-pollinated Washington State and BC experience. In the mid-1990s, Washington State research established the **primacy of hydrology** in either protecting or impacting stream health. In BC, this finding spurred development and evolution of the Water Balance Methodology. Twenty years later, a convergence of initiatives and ideas is the catalyst for taking stock of past and current research.

In 1995, Dr. Daniel Pauly coined the phrase “shifting baseline syndrome” (Figure 1) to describe why each new generation lacks direct knowledge of the historical condition of the natural environment, and how this lack of understanding plays out as a failure to notice change.

The flip side of an impact, however, is an opportunity. Over the past two decades, a series of teachable moments has set the stage to reverse the sliding baseline in the Georgia Basin. Communities could re-set the ecological baseline IF they would implement standards of practice that truly replicate and restore a desired watershed condition. This outcome requires a ‘whole systems’ approach to community planning and infrastructure servicing.

Watersheds are Infrastructure Assets

BC has a provincial policy, program and regulatory framework that enables local governments to move from UNDERSTANDING to IMPLEMENTATION of a “whole systems” approach keyed to the primacy of hydrology.

The new Water Sustainability Act (“the Act”) plus **Asset Management for Sustainable Service Delivery: A Framework for BC** are lynch-pins for looking at water and watersheds differently. The Act connects land and water, and makes the link to desired water balance outcomes. The BC Framework is a powerful tool for local governments to focus their community planning and infrastructure decision processes on beneficial life-cycle outcomes.

Asset management has traditionally been about hard engineered assets such as waterlines, sanitary and storm sewers, and roads. Yet, watershed systems are also “infrastructure assets”. Trees, soil, green spaces and **Water Balance pathways** contribute to a municipal service function. These assets provide *hydrologic integrity* for a healthy watershed system. This desired outcome is a driver for protecting and managing nature’s services in the same way that engineered assets (and the services they provide) are managed.

Whole Systems Approach

Restoring hydrologic integrity, and thus the water balance, is key to achieving a water-resilient future in urban areas. A key message in the Primer is the necessity of “staying true to the science” IF communities are to achieve a vision for *sustainable watershed systems*.

The Partnership hopes that readers will be inspired to learn more about the science behind the Water Balance Methodology. Four themes are introduced (in the box below).

Achieving sustainable watershed systems through asset management will require long-term commitment by communities, successive municipal councils and regional boards, and generations of land and water professionals.

Harness nature to adapt to a changing climate: Part 1 introduces new ecosystem-based adaptation (EbA) research in BC that may inspire a new generation to “think and act like a watershed”.

Get the hydrology right and residential water quality typically follows along: Part 2 celebrates the 20th anniversary of publication of the seminal Washington State research by Dr. Richard Horner and Dr. Chris May on the primacy of hydrology.

A journey to a water-resilient future starts with the first rain garden: Part 3 showcases breakthrough rain garden water quality research by Dr. Jenifer McIntyre at Washington State University that builds on the work of Horner and May.

Water balance pathway to a water-resilient future: Part 4 introduces the parallel journeys of Washington State, California and BC; and how the Water Balance Methodology is the foundation for an ecosystem-based approach to protection of hydrologic integrity.

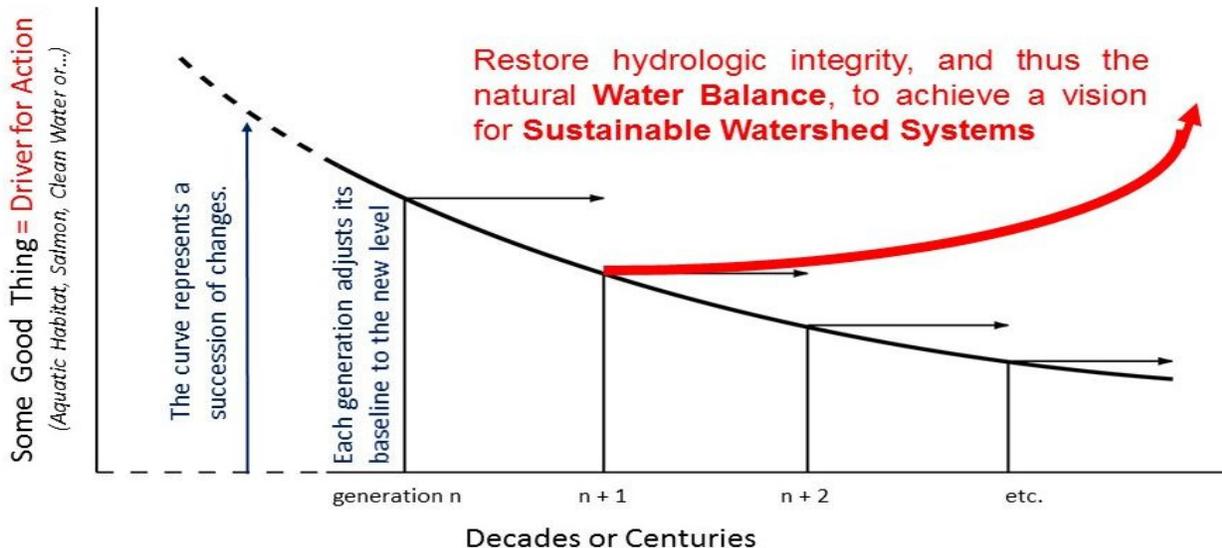


Figure 1 – Re-Set the Sliding Ecological Baseline