the partnership
for water sustainability in bc

IMPLEMENTING THE WHOLE-SYSTEM, WATER BALANCE APPROACH IN BRITISH COLUMBIA: "Closing the Data Gap: Water Stewards, the Key to the Future" – provincial government initiative aims to build capacity and mobilize the stewardship sector to collect flow data in creeksheds

An article posted on the waterbucket.ca website in February 2019

“Closing the Data Gap: Water Stewards, the Key to the Future”

The rhythms of water are changing in British Columbia – summers are longer and drier, winters are warmer and wetter. This has game-changing implications for water management. Adapting to this ‘new normal’ requires transformation in how practitioners view the water cycle. The ‘new normal’ is a catalyst for action by the provincial government to collaborate with the stewardship sector on Vancouver Island to involve volunteers in flow data collection in creeksheds

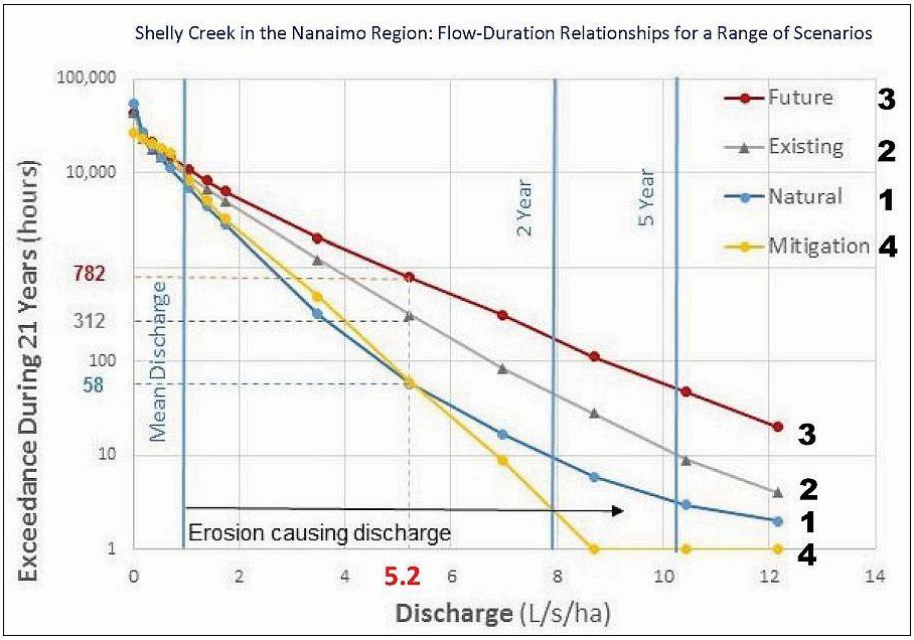
A creekshed is, by definition, a small watershed (i.e., a 1st order stream) that is local in scale such that residents can relate to it.

The driving force behind this grass-roots provincial government initiative is Neil Goeller, Ministry of Environment and Climate Change Strategy. He is working with streamkeepers to implement a hands-on program for assessing flow in streams under drought conditions. This critical need aligned with the educational goals of ***Parksville 2019****, the 2nd Annual Vancouver Island Symposium on Water Stewardship in a Changing Climate.*

What Happens on the Land Matters to Streams!

"The collaborative approach championed by Neil Goeller has the potential for a considerable beneficial impact. Streamflow data collection is a practical way to educate streamkeepers about creekshed hydrology," states Peter Law, President of the Mid Vancouver Island Habitat Enhancement Society (MVIHES).

"They would then be effective in explaining to elected officials and others in local government why water balance restoration must be a fundamental requirement of the land development process. Simply put, it is all about understanding what those points on the flow-duration curve mean."



Top-Down & Bottom-Up

"This is the kind of top-down and bottom-up grassroots initiative that the Partnership for Water Sustainability actively supports because, in building an informed understanding of cause-and-effect, we see the potential for Neil's program being a difference-maker over time.

"What happens on the land does matter to streams. Development reduces the capacity of the landscape to absorb and hold water. In a drought, there is little or no flow as the land dries out," continues Kim Stephens, Partnership Executive Director.

"Right now, the vision for collaboration consists of government and other regulatory bodies building better decision-making capacity for watershed decisions, by involving the watershed stakeholders in the collection of relevant scientific data that would be used to inform watershed decisions," adds Richard Boase,

He is the Section Manager Environmental Sustainability (Operations) at the District of North Vancouver; and Vice-President of the Partnership for Water Sustainability. Richard Boase is a champion of **citizen science**.

TO LEARN MORE*:* Download a copy of Water Balance Approach on Vancouver Island[1], released in January 2018, for an explanation of the flow-duration relationships as illustrated below.

Whole-System, Water Balance Approach

MVIHES was the first stewardship group to become involved in this grass-roots program, in large part because the educational outcomes align with the professional experience of Peter Law. Before retiring from government, he was a Senior Biologist in the BC Ministry of Environment.

As Chair of the inter-governmental Steering Committee responsible for Stormwater Planning: A Guidebook for British Columbia, he played a leadership role in introducing the Whole-System, Water Balance Approach to British Columbia. Kim Stephens was the project manager and principal author of the Guidebook.

Stormwater Planning: A Guidebook for British Columbia

"The Guidebook is standing the test of time because the foundation material is science-based," emphasizes Peter Law. "The Guidebook applied a science-based understanding of the relationship between land use change and 'changes in hydrology'. This resulted in development of the water balance methodology to establish performance targets for reducing rainwater runoff volume when it rains and sustaining flow in creeks when there is a drought."

[1] https://waterbucket.ca/rm/wp-content/uploads/sites/5/2018/01/Water-Balance-Approach-on-Vancouver-Island_Jan2018.pdf

Involvement of Stewardship Sector in Flow Measurement

"Understanding the complex interactions of **whole-system, water balance** processes that lead to water availability in and on the ground, and all the values that depend on it, is critical to effective water resource allocation," continues Neil Goeller.

"The provincial government leads the way with collection, storage and dissemination of surface and groundwater data. A federal agreement provides for large scale data collection on major sources (rivers and lakes). However, there is a gap at the local level.

"Stewardship groups have local knowledge about local water resources; and are the most invested and most connected to the land base. Participation in streamflow data collection is a way to educate them about creekshed hydrology, in particular correct data collection techniques and their importance for refining the water balance and understanding what the numbers mean.

"This would create understanding that would enhance their effectiveness as champions for reconnecting hydrology and ecology. It would also fill a gap at the creekshed micro-scale where flow data are sparse to non-existent."

TO LEARN MORE: Download a copy of Primer on Water Balance Methodology for Protecting Watershed Health. The Primer storyline is structured in five parts:

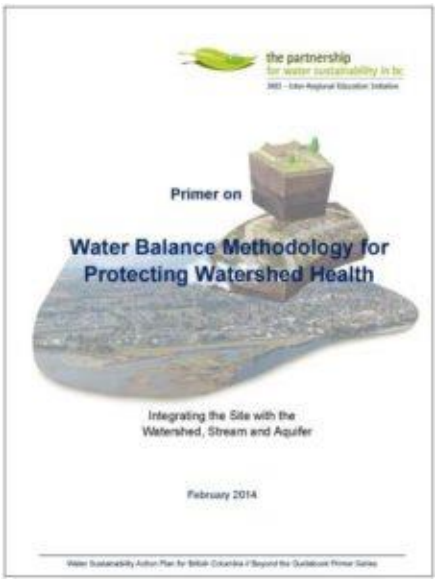
Part A: Watershed-Based Approach to Rainwater Management

Part B: Water Balance Methodology Explained

Part C: Science Behind the Methodology

Part D: How to Establish Targets

Part E: References



Shelly Creek Demonstration Applications

"Neil Goeller will do an in-stream flowmeter demonstration at Shelly Creek on April 2. This on-site activity is part of the program for the Dave Derrick Workshop on sustainable stream restoration that precedes the Parksville 2019 Symposium," states Peter Law.

We also plan to include this demonstration as a scene in a video that we have commissioned for the symposium, and that will be showcased during the symposium. In this way, we hope to expand awareness and create interest on the part of stewardship groups to participate in the initiative."

Building Stewardship Sector Capacity on Vancouver Island

"MVIHES and the Friends of French Creek are the first two groups to participate in the flow monitoring program. Both are very enthusiastic. They have established the precedent for top-down and bottom-up collaboration," reports Neil Goeller.

"These groups have talented and intelligent members, and the task that we are looking to them to undertake is relatively simple. People like to do the things that they like to do. And they are keen to help."

"All things considered, it is a word-of-mouth process to expand participation in the initiative. That is the value of the Parksville 2019 Symposium – it is an opportunity to raise awareness; and if groups are interested, we would then bring them into the program. As word spreads, I can meet with people on-site to train them in the use of the flowmeter. When I look at the big picture, I see it as a self-selecting process to grow the collaboration."

"It really is a long-term objective to build stewardship sector capacity to do flow measurement. The people who are involved in this grass-roots program are all volunteers. They are doing the field work because they are passionate about it, and most importantly, they have the time. Again, it is a long-term and slow process to interface with these groups and build working relationships."

"My vision is to develop relationships and partnerships with stewardship groups, local governments, federal government and First Nations to expand our collection and understanding of data. The province's new Water Data Portal for BC stores all our collected data and makes it available for public use."

"The surface water network is growing alongside the well-established groundwater well network. I tend to have a deficit of staff time (my own), but reasonable access to resources (equipment). Hence, my hope is to leverage interested parties to collect the data they are interested in, or that may have value to them now and in the future, to allow better resource decision making."

Peter Law measuring the flow in Shelly Creek

Building Stewardship Sector Capacity in the District of North Vancouver

Richard Boase will also do an in-stream demonstration at Shelly Creek, thereby demonstrating inter-regional collaboration in action. “As part of the Water Quality program for our ISMP (Integrated Stormwater Management Plan), the District of North Vancouver (DNV) has purchased state of the art equipment that we use to monitor water quality,” reports Richard Boase.

“Streams and storm sewers are part of an established program to collect data from strategic points within a watershed. The data collected is used to inform decision-making regarding land use, operations and pollution prevention. The DNV has enlisted and trained approximately 10 local volunteers and stream keepers in the use of the equipment. Volunteers sign out the equipment and conduct sampling of predetermined stations in a watershed that is close to their home.