

# Parksville 2019: Second Annual Vancouver Island Symposium on Water Stewardship in a Changing Climate

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*Theme: Make Better Land Use Decisions &  
Move Towards Restorative Land Development*

In 2019, join us in Parksville at the City's Community and Conference Centre (132 E. Jensen Avenue) for a field day on April 2, followed by a 2-day symposium on April 3-4

**FOR PRICING & TO REGISTER VISIT:** [civicinfo.bc.ca/event/2019/Parksville-Water-Stewardship-Symposium](http://civicinfo.bc.ca/event/2019/Parksville-Water-Stewardship-Symposium)



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A program deliverable for "Sustainable Watershed Systems, through Asset Management",  
Implemented under the umbrella of the Georgia Basin Inter-Regional Education Initiative

# Water Stewardship in a Changing Climate

## Move Towards Restorative Land Development: Symposia Overview

**CONTEXT:** The rhythms of water are changing – warmer and wetter winters; longer and drier summers. Adapting to this ‘new normal’ requires transformation in how we value nature and service land, and how we reconnect hydrology and ecology. **The goal of the ‘whole-system’ approach is to re-establish creekshed function!**

### Nanaimo 2018 Symposium

Held in April 2018, Water Symposium #1 was a ‘call to action’. The theme? Build on the good outcomes that flow from local government and stewardship sector collaboration!

Symposium #1 introduced a vision for ‘restorative land development’ that would re-establish creekshed function. And it energized the audience with this challenge: ***How will communities ‘get it right’ through collaboration as land develops and redevelops?***

### Parksville 2019 Symposium

Water Symposium #2 will celebrate local government initiatives on Vancouver Island that are ‘getting it right’. These success stories are characterized by 3 attributes: commitment, collaboration and the ‘hard work of hope’.

A decade of effort, by partnerships of local governments and community stewards, is demonstrating success on the ground where it matters. They are on a pathway to reconnect hydrology and ecology. ***Follow the leaders!***



# 2<sup>nd</sup> Annual Symposium on Water Stewardship in a Changing Climate

## Parksville 2019: Program at a Glance

For pricing, location and registration, VISIT: [civicinfo.bc.ca/event/2019/Parksville-Water-Stewardship-Symposium](http://civicinfo.bc.ca/event/2019/Parksville-Water-Stewardship-Symposium)

**Tuesday, April 2<sup>nd</sup>**

*“In the Field”*

### OPTION 1 (FREE)

Join us on a tour of the newly completed Englishman River Water Service treatment plant serving Parksville and Nanoose Bay Peninsula.

### OPTION 2

*(40 registrants maximum)*

Learn from Dave Derrick. First, a classroom session. Then, an in-stream lecture at Shelly Creek, which is an emerging demonstration application for *sustainable stream stabilization*.

**Wednesday, April 3<sup>rd</sup>**

Theme: *“Sustainable Stream Restoration”*

**Reconnect hydrology and ecology – what happens on the land in the creekshed matters to streams!**

In the 1990s, Dr. Chris May’s seminal research defined the relationship between land use change and stream impacts. To protect stream ecology, communities must address the root causes of ‘*changes in hydrology*’ (water quantity).

### FREE PUBLIC LECTURE:

An evening lecture on April 3<sup>rd</sup> by Storm Cunningham is the bridge between the two days.

**Thursday, April 4<sup>th</sup>**

Theme: *“Restorative Land Development”*

**Yes, we can decrease our destructive footprint while at the same time increasing our restorative footprint!**

Storm Cunningham is a global thought leader. In **The Restoration Economy**, 2002, he showed how “restorative development” would drive economies in the 21<sup>st</sup> century.

Sustainable is attainable. Make where we live better. Create an “actionable vision”. Chart a new course to a sustainable water future. Celebrate Vancouver Island success stories. **Follow the leaders!**

Cross-border collaboration expands our horizons and connects us with a larger body of experience!



**Dave Derrick**  
Stream Restoration Innovator  
*(Alabama)*



**Dr. Chris May**  
Environmental Scientist-Engineer  
*(Washington State)*



**Storm Cunningham**  
Author – Motivator – Publisher  
*(Maryland)*

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## Dave Derrick & Sustainable Stream Restoration



**Dave Derrick**

Stream Restoration Innovator

Dave Derrick had a 35-year career with the US Army Corps of Engineers where he held the position of Research Hydraulic Engineer in the Coastal and Hydraulics Lab.

Dave has had the opportunity to model ideas in the lab and then implement solutions in the field. He developed and refined dozens of cost-effective streambank protection techniques, including different types of Bendway Weirs.

He enjoys working with community-based groups. His focus is on “using nature’s materials”. Through 150-plus workshops over the past decade, he has taught over 8,000 individuals.

A true innovator in *Potomology* (the study of the behaviour of rivers), his wealth of hands-on experience encompasses over 10,000 hydraulic structures in rivers and streams, in every American state, and under every possible situation.

Over the course of his career he has been an educator, facilitator, designer, reviewer, and constructor of almost every type of stabilization/restoration project imaginable.

## On April 2, an Introduction to Stream Investigation & Stabilization

MORNING: **Classroom Lecture**

### Improving Stream Function

Dave Derrick was a co-developer and co-instructor in the first American Society of Civil Engineers stream class, titled ***An Introduction to Stream Investigation, Stabilization, and Restoration***.

The morning lecture is a streamlined version of this course. Dave Derrick will cover the philosophy of restoration, channel dynamics and evolution, and bioengineering methods. Shelly Creek is the case study for improving in-stream hydraulic and environmental functions in fish-bearing streams along the east coast of Vancouver Island.

***Space is Limited / Maximum 40 Registrants***

AFTERNOON: **On-Site at Shelly Creek**

### Human Impact on Shelly Creek

Shelly Creek is an outdoor classroom for Dave Derrick to demonstrate how to assess stream stability problems and develop sustainable solutions in a ‘whole-system’ context.

When the Englishman River was declared to be the most endangered river in BC, the ‘call to action’ resulted in a Watershed Recovery Plan. **Survival of Coho salmon depends on a healthy Shelly Creek**, the key tributary.

Hydrology hits first and hardest. As a result, channel erosion and sedimentation caused by ‘changes in hydrology’ are threats to aquatic habitat and fish survival in Shelly Creek.

# Water Stewardship in a Changing Climate

## Make Better Land Use Decisions: Shelly Creek Relevance

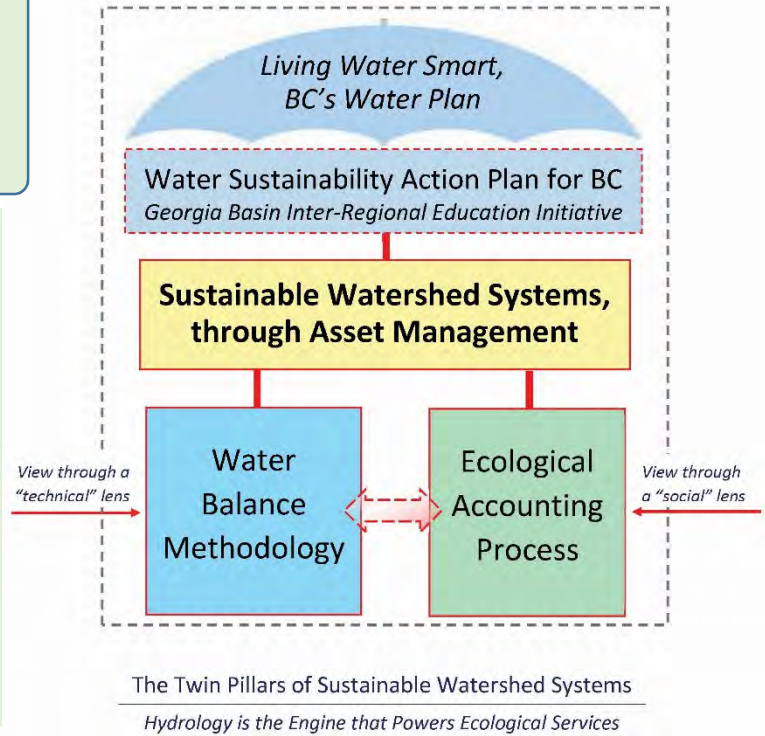
Shelly Creek is a provincial demonstration application for the **Whole-System, Water Balance Approach** and the **Ecological Accounting Process (EAP) Initiative**

The Water Balance Methodology applies science-based understanding to establish creekshed-based performance targets and downscale those targets to the site level.

Taking action depends on what a community thinks a creekshed is worth. The EAP methodology quantifies 'worth'.

Success in solving 'in your face' problems caused by land use changes would mean:

1. Less flooding
2. Less stream erosion
3. More streamflow when needed most



## Connecting People to Their Landscape

The Shelly Creek experience demonstrates how an informed stream stewardship sector can expand its involvement and influence beyond the stream channel; and be a catalyst for changes in planning and engineering practice that would restore the water balance over time.

'Getting it right', both on the landscape and in the stream channel, depends on a 'top-down & bottom-up' approach that is founded on partnerships and collaboration.

**The restoration challenge:** align efforts in order to move from *stop-gap remediation* of in-stream problems to *long-term restoration* of a properly functioning creekshed.

DOWNLOAD: [http://waterbucket.ca/rm/files/2017/10/Shelly-Creek-Water-Balance-Demonstration\\_Oct2017.pdf](http://waterbucket.ca/rm/files/2017/10/Shelly-Creek-Water-Balance-Demonstration_Oct2017.pdf)

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## Dr. Chris May & the ‘Whole-System’ Approach



**Dr. Chris May**  
Environmental Scientist-Engineer

In the 1990s, the pioneer work of Dr. Chris May and Dr. Richard Horner at the University of Washington was transformational. Their findings resulted in a hydrology-based framework for protecting watershed health.

Their seminal 1996 paper synthesized a decade of research. They identified and ranked the four factors limiting stream health. #1 is ‘changes in hydrology’; #4 is water quality.

Twenty years later, Chris May is Surface & Stormwater Division Director with Kitsap County Public Works in Washington State. His local government work has allowed him to put theory into practice. Under his leadership, Kitsap County has applied the Whole-System Approach to develop its strategy for watershed retrofit and rehabilitation.

Horner and May’s research findings influenced and are integrated into the methodology that is the foundation for **Stormwater Planning: A Guidebook for British Columbia**.

## On April 3, the theme is *Sustainable Stream Restoration*

### Mimic the Water Balance to Reduce Flooding, Erosion & Loss of Baseflow

So many studies manipulate a single variable out of context with the whole and its many additional variables. Horner and May, on the other hand, investigated whole systems in place, tying together measures of the landscape, stream habitat, and aquatic life.

The key to the Whole-System Approach is understanding how rainfall reaches a stream via three flow paths in a watershed: surface runoff, lateral interflow in shallow soils, and deep groundwater. Chris May provides this perspective on stream restoration that lasts:

*“Unlock that key and we can successfully implement appropriate measures to mimic the natural water balance.”*

### Action Required at Multiple Scales to Restore Natural Flow Regimes

Chris May has learned through experience that it is necessary to do everything:

*“Working at multiple scales and multiple levels is really key. But, so many people in local government are just too busy these days to even contemplate what needs to be done to repair and restore at multiple scales and levels. As a result, in the big urban cities it is just too difficult for local government staff to work concurrently at multiple scales.”*

*“Kitsap is at a manageable scale. The County is big enough to effect change and make things better. That is our goal – have a positive impact on the community.”*

# Water Stewardship in a Changing Climate

*On April 3, the theme is 'Sustainable Stream Restoration'*

**KEY MESSAGE: Reconnect hydrology and ecology – what happens on the land in the creekshed matters to streams!** *Development reduces the capacity of the landscape to absorb and hold water. When it rains, there is more flow volume and streams erode; in a drought, there is little or no flow as the surrounding land dries out.*

Module	Theme & Description of Scope
A	<b>“Getting It Right”: The Whole-System Approach</b>
1 ½ hrs	<p><b>ABSTRACT:</b> Dr. Chris May will set the tone for the symposium. He will tell the story of how his research correlated the relationship between land use and stream health; and how Kitsap County is a living laboratory for implementing a hydrology-based approach at multiple scales (to build resilience).</p> <p><b>TAKEAWAY:</b> Participants understand that hydrology is the engine that powers ecological services.</p>
B	<b>Panel &amp; Town-Hall Session: Watershed Health and You</b>
1 ½ hrs	<p><b>ABSTRACT:</b> The Englishman River ‘big picture’ story (endangered river, regional water source, Shelly Creek restoration) provides the backdrop for developing a shared understanding of what a whole-system approach looks like, and what it would mean to reconnect hydrology and ecology. The spotlight is on <b>citizen science</b>. A 5-person team will prime the audience with 5-minute vignettes.</p> <p><b>TAKEAWAY:</b> Participants would be engaged, energized and inspired to make a difference.</p>
C	<b>Make Better Decisions: First, Understand How Rain Reaches a Stream</b>
1 ¾ hrs	<p><b>ABSTRACT: THIS SESSION WILL BE CONDUCTED AS “A MINI-WORKSHOP WITHIN THE SYMPOSIUM”</b></p> <p>Understanding the complex interactions of <b>whole-system, water balance</b> 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. The provincial government leads the way with collection, storage and dissemination of surface and groundwater data. However, there is a gap at the local level. A provincial government initiative on Vancouver Island is mobilizing stewardship groups and community volunteers to collect such data. This contribution would create understanding that would enhance the effectiveness of the stewardship sector as champions for reconnecting hydrology and ecology.</p> <p><b>TAKEAWAY:</b> Streamkeepers would understand the value of their contribution in being part of a provincial initiative to fill a data collection gap at the local level.</p>
D	<b>Back to the Future: Reconnect Hydrology &amp; Ecology</b>
¾ hr	<p><b>ABSTRACT:</b> This segment is the book-end for the Chris May opening. Decades of in-stream restoration work have not been sustainable because communities have not addressed the root cause of ‘changes of hydrology’, even though we have known what we need to do. The closing for Day 1 is a ‘call to action’, and the bridge to Storm Cunningham’s evening lecture and the theme for the Day 2 program.</p> <p><b>TAKEAWAY:</b> Participants would be primed for Day 2 on <i>restorative land development</i>.</p>

# Storm Cunningham & Restorative Development



**Storm Cunningham**

Author – Motivator - Publisher

Everywhere one turns these days, some form of the words “renewal”, “restoration” or “regeneration” appear. Storm Cunningham was the catalyst of that global “re” trend when he published **The Restoration Economy** in 2002. This was followed by **reWealth** in 2008. Coming in 2019 is his third book, **RECONOMICS: The Rise of Resilient Prosperity**. Storm is founder of REVITALIZATION.org and the hands-on publisher of the global news journal [REVITALIZATION](https://revitalization.org)<sup>1</sup>.

He has been called “the world’s thought leader on community revitalization and natural resource restoration”. His message: *“When collaboration goes beyond the watershed restoration ‘silo’, it can yield partnerships with local and regional revitalization efforts. This, in turn, can yield new funding and political support for restoration.”*

To learn more, watch Storm Cunningham’s TEDx Talk at <https://www.youtube.com/watch?v=fpokEthuW2U>

<sup>1</sup> <https://revitalization.org>

## On April 4, the theme is *Restorative Land Development*

### On the evening of April 3: A Free Public Lecture

Doors open 6:30pm, welcome at 7pm

#### The Challenge: Design with Nature

*“In my experience, the civil engineering profession has trouble adopting the restorative mind-set. The main problem is that engineering is all about control and certainty. Urban planners have a similar problem. But living systems---like watersheds and cities---resist control, and exhibit surprising behavior when they are healthy.*

*This is why 80% of the revitalizing work done by urban planners and civil engineers in the 21st century will undo 80% of the work their predecessors did to cities and nature in the 20th century. We don't fully understand complex systems, so humility and adaptive management are needed to restore nature, and to revitalize cities.”* – Storm Cunningham, Sept 2018

### On April 4 at the Symposium: Concluding Reflections

#### We Can Create the Future We Want

Storm Cunningham will reflect on what he heard throughout the 2-day symposium. He will connect dots when he relates Vancouver Island initiatives to this perspective:

*“Visionaries, designers, planners, policy makers, and project managers abound. **Strategists are rare.** As a result, resilience and revitalization efforts often fail due to 1) **bad strategy**, and 2) **no strategy**. Since strategies are our path to success, they become our primary interface with our world. Thus, what we restore, restores us. What we revitalize, revitalizes us.”*



# Water Stewardship in a Changing Climate

*On April 4, the theme is 'Restorative Land Development'*

**KEY MESSAGE: Yes, we can decrease our destructive footprint while at the same time increasing our restorative footprint!** *Celebrate Vancouver Island success stories. These are inspirational in nature, creekshed in scale, and precedent-setting in scope and outcome. "Get it right" and proceed along a restorative development pathway.*

Module	Theme & Description of Scope
A	<b>"Getting It Right": Make Better Land Use Decisions</b>
1 ¼ hrs	<b>ABSTRACT:</b> The Regional District of Nanaimo is positioned to tackle regional water issues and help create a vision to chart a new course to a sustainable water future. The first decade of the Drinking Water & Watershed Protection Program (DWWP) (2009-2018) built a strong foundation of public outreach and science. In the next decade, awareness and data will inform water policy and planning. <b>TAKEAWAY:</b> Participants would understand that Action Plan Update is about better land decisions.
B	<b>Panel &amp; Town-Hall Session: Make Where We Live Better</b>
1 ½ hrs	<b>ABSTRACT:</b> A 5-person team will prime the audience with vignettes about long-term and emerging initiatives in communities on Vancouver Island. These success stories demonstrate what is achievable when there is a restoration imperative. The panel will build on Module B's "actionable vision" theme. <b>TAKEAWAY:</b> Participants would be engaged, energized and inspired by stories of collaboration.
C	<b>Moving Towards Restorative Development</b>
2 hrs	<b>ABSTRACT:</b> The Bowker Creek and Brooklyn Creek restoration success stories are beacons of hope. Each has a long history. Inspirational and provincially significant precedents, each demonstrates how local government partnerships with stewardship groups can be transformational and 'make where we live better'. These precedents represent a range of situations: Bowker in the urban heart of the Capital Region; Brooklyn in the suburban Comox Valley. They are beacons of hope. The Bowker Creek Urban Watershed Renewal Initiative serves as a 'how-to-guide' for a 'top-down and bottom-up' approach that connects with the community and gets the <b>vision and strategy</b> right. Brooklyn Creek is a working example of how to apply the Ecological Accounting Process (EAP) to value the <b>worth</b> of a creekshed, its hydrology, and ecological systems. <b>TAKEAWAY:</b> Participants would be inspired by the 'top-down and bottom-up' approach.
D	<b>We Can Create the Future We Want</b>
¾ hr	<b>ABSTRACT:</b> Storm Cunningham will conclude the symposium with an inspirational message. The goal of making the world 'less worse' does not go far enough, he will state. Rather, we have it within our power to undo previous damage and make the world better. The essential ingredients for restorative land development encompass a vision, strategy to deliver the vision, and commitment to implement. <b>TAKEAWAY:</b> Participants would understand the essential ingredients for restorative development.

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