

October 15<sup>th</sup> 2026

## Final Comments

### Peer Review of WaterSmith (2025): Hydrologic Risk Assessment for Rose Swanson Watersheds

By Dr. Younes Alila, P.Eng.

In September 2026, I peer reviewed the Hydrologic Risk Assessment for watersheds draining northward from Mount Rose Swanson conducted by WaterSmith (2025). My peer review led me to the conclude that WaterSmith Hydrologic Risk Assessment is scientifically indefensible, and hence can't be used to support any recommendation.

In my peer review, I raised questions of a fundamental nature detailing how WaterSmith (2025) methodology is outdated, scientifically indefensible, and proven by peer reviewed literature to underestimate the power of forests in reducing the risk to hydrology in general; and risk to peak-flows and low-flows in particular.

In early October 2026, I received the response of WaterSmith to my questions. His response to my questions has not changed my conclusion— namely WaterSmith (2025) Hydrologic Risk Assessment is still scientifically indefensible.

WaterSmith Risk Assessment and his response to my questions is revealing misconceptions of the fundamental differences between the old non-causal reductionist-deterministic framework, which he is using and defending, and the new causal holistic-probabilistic framework already adopted by colleagues in the profession.

Coincidentally, the FPBC (Association of Professional Foresters) recommended via its Magazine (The Increment – October 2026 Issue) the reading of one of my papers. This is one of a series of peer reviewed articles published over the last 20 years, which demonstrate how the deterministic-reductionist framework used by WaterSmith (2025) is not only flawed but also underestimates the power of forests in mitigating above and below ground hydrologic response of the landscape.

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#### **Read: *Stochastic Hydrology Reveals the Controls of Forest Harvesting – Peakflow Causal Relations in Snow-Transient Environment***

Read research examining the physical drivers of peak flows and how they are influenced by forest disturbance in rain in snow environments.

*Stochastic Hydrology Reveals the Controls of Forest Harvesting — Peakflow Causal Relations in Snow-Transient Environment* is published by **Advances in Water Resources**.

"Understanding and predicting how forest harvesting alters peakflows is essential for managing downstream risk," reads the abstract, "as changes in forest cover can intensify extreme events, affecting water quality, infrastructure, ecosystems, and public safety."

[Read more](#)

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As soon as I was alerted today by a friend, who is also a registered professional forester, and just out of curiosity, I did a google search on why FPBC recommended to its membership the reading of my journal article. Such Google Search revealed the following, and I quote:

#### AI Overview

[Forest Professionals BC \(FPBC\)](#) distributes an e-newsletter to its registrants called [The Increment](#). It frequently highlights critical research, professional development updates, and practice guidelines relevant to British Columbia forestry. [1, 2]

The recommendation you are referring to points toward the landmark forest hydrology research by **Dr. Younes Alila**, a prominent professor and researcher at the **UBC Faculty of Forestry**. Dr. Alila and his team have spent decades publishing groundbreaking papers that challenge conventional assumptions regarding forest harvesting and watershed health. [1, 2, 3]

Depending on the specific timing of the newsletter you read, the recommended paper is almost certainly one of his highly discussed recent studies:

#### ***1. Non-stationary frequency pairing reveals a highly sensitive peak flow regime to harvesting across a wide range of return periods (2026)***

- **Authors:** Spencer Pearson-Atkins, [Younes Alila](#), and Xu Jian (Joe) Yu.
- **Core Finding:** This study details a highly sensitive peak flow regime across various environmental conditions, demonstrating how clear-cut logging dramatically spikes flood risks over much wider return periods than traditional hydrology frameworks accounted for. [1]

#### ***2. Stochastic framework reveals the controls of forest treatment – peakflow causal relations in rain environment (2025)***

- **Authors:** Henry Pham, [Younes Alila](#), and Eldon Caldwell.
- **Core Finding:** Published in a prominent forest hydrology framework, this paper investigates the direct causal relationship between forest harvesting and peak river flows. It argues that vegetation cover is a primary natural defense against the dual threats of escalating severe floods and prolonged seasonal droughts. [1, 2, 3]

End of Quote

One of the illustrative examples of the misconceptions in WaterSmith (2025) and his response to the questions is the following claim: “As the study area is dominantly northward facing, impacts of forest cover removal on snowmelt rates would be limited.” It is true that the increase in energy available for melting the snow on north- and east-facing slopes are less than on west- and south-facing slopes. However, this is a deterministic-reductionist stand level energy balance narrative, and it is not indicative of how the forest cover removal is going to affect runoff in the channels. The new holistic-probabilistic framework can reveal a sensitive runoff regime to forest cover removal even on east- and north-facing slopes.

The lack of data needed for applying the right causal framework for hydrologic risk assessment can not be used to justify the use of a misleading non-causal framework, especially when such a framework underestimates the hydrologic risk. Other professionals working for BCTS (and the

industry) have already adopted the new framework even at ungauged watersheds. I do not see why the Mt Rose Swanson hydrologic risk assessment should be the exception.

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