

Landslides and Extreme Weather: Understanding How Climate Change Impacts Coastal Mountain Watersheds

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Steep rugged Vancouver Island and coastal BC are frequently impacted by rain triggered landslides. These landslides have several deleterious effects: They erode the landscape; they block or enter streams and affect water quality, fish habitat and stream morphology; they threaten lives property and infrastructure. In addition, landslides respond rapidly to shifts in precipitation regimes, and provide an excellent indicator of our preparedness, and the potential for far-reaching impacts of global warming. Beginning with a clear picture of what we know today, we consider the on-the-ground impact of more frequent and more intense winter storms predicted for the Pacific Northwest by GCMs and regional climate models, in terms of landslides, erosion and probable impacts to streams. We will consider landslides and erosion over the last 10,000 years on Vancouver Island as we moved from an early post-glacial landscape to the modern setting, and compare that to the human impact of the last 100 years. Finally, we examine the impacts and change in return frequency of a major storm (November 15, 2006), and its implications for the future. We will explain where important data gaps lie, and propose future research.