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*Wildfire and Water Quality: Processes, Impacts and Challenges*  
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## **Sediment yields and water quality effects of severe wildfires in southern British Columbia**

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**Abstract** Following wildfire, significant erosion and water quality impacts can occur. However, in British Columbia (BC), Canada, such impacts have seldom been reported. In 2007, several large wildfires occurred in southeastern BC, some in community watersheds. Research sites were established at three fire locations, and plot-scale measurements were made of erosion using silt-fence sediment traps. Watershed-scale measurements of runoff, sediment yield and chemical water quality were made on the Sitkum fire, which burned 39% of a community watershed. A nearby research watershed provided a comparison. Significant surface erosion occurred in some burned areas, but watershed-scale sediment yield increased only slightly, as little sediment reached stream channels. Nitrate levels were elevated after the fire, but were well within accepted limits for drinking water quality. The minimal effects on physical water quality are probably due to low rainfall intensities, the nival runoff regime, and low connectivity between slopes and stream channels in a glaciated landscape.

**Key words** post-wildfire erosion; wildfire; sediment yield; turbidity; water quality; nitrate; British Columbia, Canada