

Soil erosion on subarctic forest slopes

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ABSTRACT: Investigations of sheet-rill erosion in a permafrost-free subarctic setting indicated that stripping all vegetation from the soil surface increased rainfall erosion 16 times over that produced from an undisturbed forest, from a rate of 0.008 ton per acre per year to 0.13 ton per acre per year. Removing the trees from a forested area, with only minor disturbance of ground cover, did not increase erosion. Very low erosion, 0.03 ton per acre per year, was measured from a vehicle trail on permafrost terrain. Comparison of measured erosion with erosion predicted by the universal soil loss equation indicated that the equation overestimated annual rainfall erosion by an average of 21 percent and overestimated individual storm erosion by an average of 174 percent.