

River Complexity

A river is a complex natural system that is always seeking a balance (i.e. stability) between its many variables. By changing one variable, the others are impacted.

The Effect of Clearcutting on a River's Variables

River Variable	After Clearcutting
Discharge: The volume of water	Increases during storms due to increased runoff as a result of a lack of vegetation to slow the flow of water
Sediment Load	Increases due to increased soil erosion
Erosional Transport	Increases due to increased velocity and discharge during storms
Channel Width and Depth	Increases near the clearcut due to more water being available for vertical and lateral erosion
Velocity of the River	Increases during storms due to increased discharge and gradient
Channel Roughness (i.e. the number of potholes)	Increases due to increased velocity during storms
Gradient	Increases near the clearcut due to increased discharge + greater velocity enhancing vertical erosion