

## **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**

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