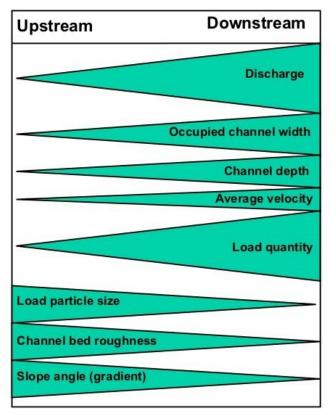
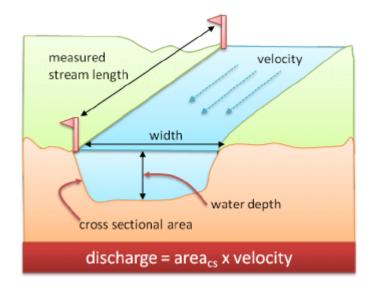




Discharge

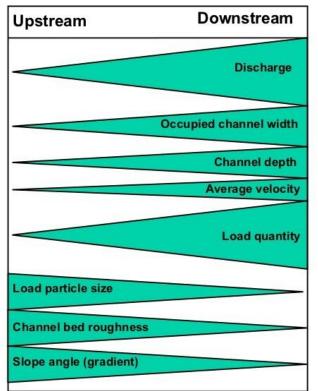


The discharge of a river is the volume of water which flows through it in a given time. It is usually measured in cubic meters per second.





Discharge

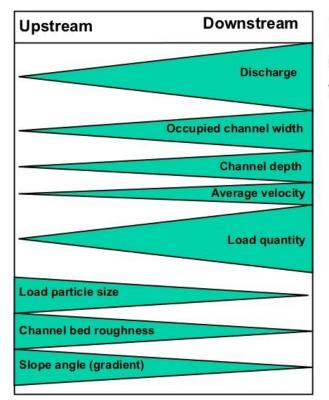


Increases due to the input from a greater amount of the drainage basin above the point of measurement





Occupied Channel Width

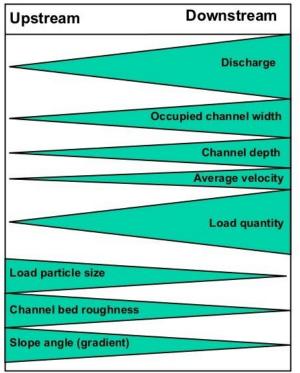


Distance across the actual channel, measured at the water surface





Occupied Channel Width



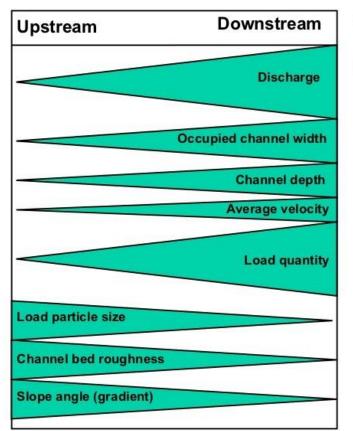
Distance across the actual channel, measured at the water surface

Increases due to increase in discharge, input from tributaries etc.





Channel Depth

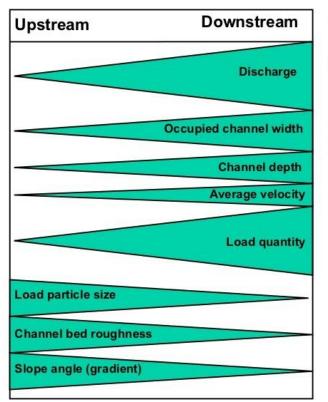


The height from the water surface to the channel bed



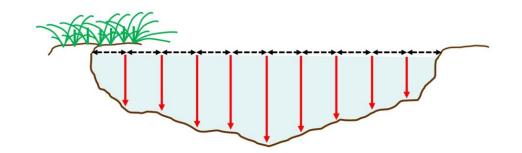


Channel Depth



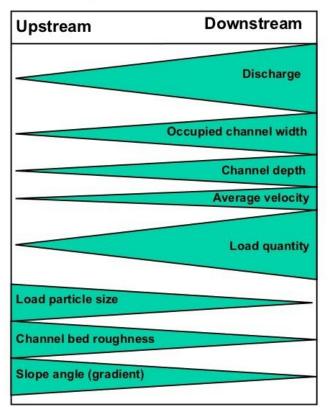
The height from the water surface to the channel bed

Increase downstream as does the discharge of the river





Average Velocity



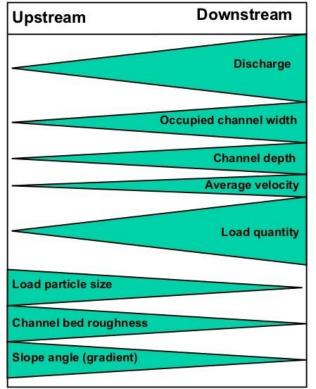
Velocity of river – measured in metres per second.







Average Velocity



Steady increase downstream

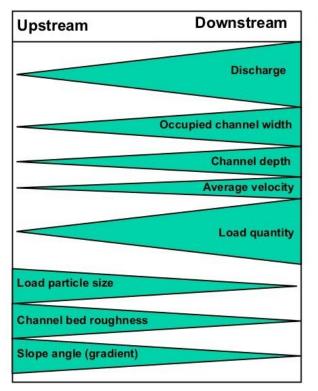
How can it be so if the gradient is decreasing?

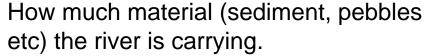
Downstream the river becomes more efficient with proportionally less contact with its bed and banks

Shown by higher hydraulic radius and lower channel bed roughness



Load Quantity



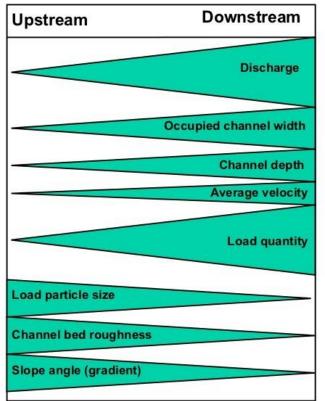




Check out the colour of the water. Why is it this colour? This is the load of sediment being carried.



Load Quantity



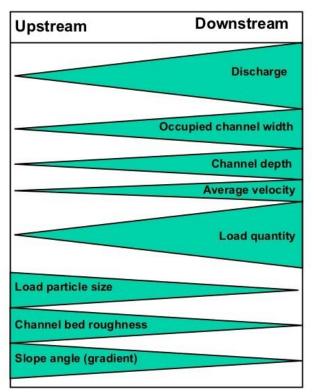
Total load of all sizes

Increases with discharge and velocity





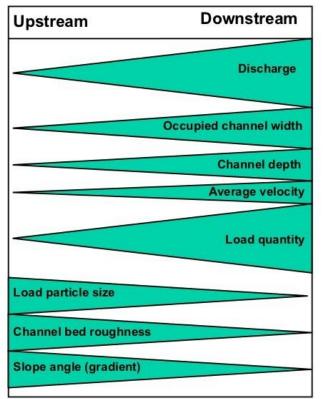
Load Particle Size



geography alltheway .com The size of the pebbles in the bed of the river. Measure in metres (e.g. 10cm pebble = 0.1m.



Load Particle Size



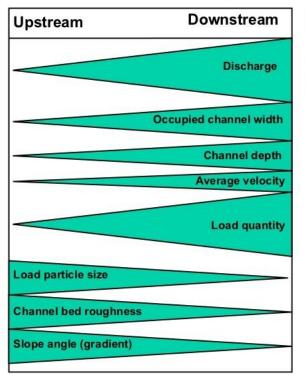
geography alitheway .com Decreases considerably downstream

Angular pebbles become more rounded

Erosional process of attrition



Channel Bed Roughness



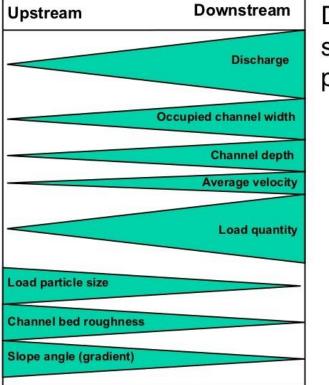


Decreases because of fewer stones etc, smaller load particle size etc.

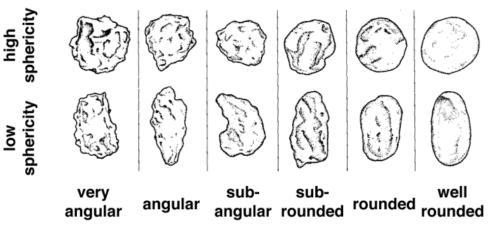


Rough and uneven bed in the upper course of the Aussonelle.

Channel Bed Roughness

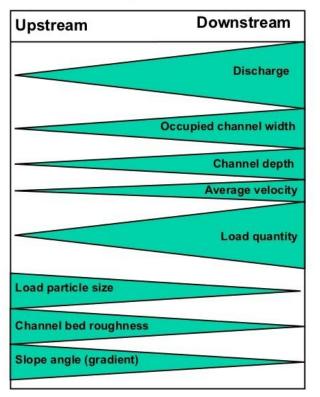


Decreases because of fewer stones etc, smaller load particle size etc.





Slope Angle



Measured in degrees

Decreases as your move downstream.





Upper reaches

Discharge is relatively small and the channel is inefficient owing to a large channel surface area compared with the amount of water. A steep gradient is needed to maintain energy levels.

Graded long profile

River is higher than its graded profile. Vertical erosion will dominate.

Middle reaches

Discharge is higher owing to tributaries adding water. The channel is more efficient. A moderate gradient is needed to maintain velocity.

River is at the same level as the graded profile. Lateral erosion and transport will dominate. This section does not gain or lose sediment overall. Sediment is transported through. Lower reaches Discharge is highest and the channel is very efficient in shape. A low gradient is capable of maintaining or increasing velocity.

River is above its graded long profi due to a hard rock outcrop. Waterfalls and rapids show active vertical erosion.

River is below its graded profile. Lateral erosion and deposition of sediment will dominate.

Base level solidans sea leve