

Calculations:

Cross-sectional Area:

$$A = \text{Width} \times \text{Mean Depth}$$

Wetted perimeter:

The total length of the bed and bank sides that is in contact with the water in the channel.

Hydraulic Radius (Efficiency):

The ratio between the area of the cross-section of the river channel and the length of its wetted perimeter. The greater the Hydraulic radius the more efficient the river.

$$\text{HR} = \frac{\text{Cross sectional area}}{\text{Wetted perimeter}}$$

Discharge:

The amount of water originating as precipitation that reaches the channel by surface runoff, throughflow and baseflow. Velocity of the river V , (m per second,), multiplied by the cross-sectional area of the river, A , (sq m). This gives the volume in cu m/sec or cumecs.

$$D = A \times V$$