

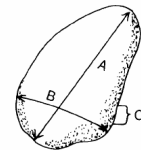
Wolman Pebble Count

Various publications describe the Wolman Pebble Count procedure. This technique requires the observer to measure sizes of random particles using a gravelometer. Particles smaller than 2 mm are placed in a category of <2mm. A step-toe procedure is frequently used to randomly select particles for quantification.

Wolman Pebble Count Procedure

1. Select a reach for sediment particle size distribution quantification. For stream characterization, sample pools and riffles at the same proportion the occur in the stream reach.
2. Start transect at a randomly selected point (throw a pebble) along the edge of stream. Take one step into the water perpendicular to flow and, while averting your eyes, pick up the first pebble touching your index finger next to your big toe.
3. Measure the b-axis by determining which hole the pebble fits through in the gravelometer and record in data book. For embedded pebbles or those that are too large to move, measure the shortest axis visible.
4. Take another step across the stream and repeat the previous steps until you reach the opposite side. Establish a new transect and begin the process over again. If your stream reach is relatively narrow (<2 m), you can modify the method by walking upstream in a zig-zag pattern instead of perpendicular to flow. In general, you will need to collect 100 measurements in order to accurately quantify pebble distributions.
5. After data is collected, plot data by size class (\log_2 scale) and frequency to determine distributions. For example the D_{50} is the particle size that 50% of the samples are equal to or smaller than.

Size Class	Size Range (mm)
Sand	<2
Very Fine Gravel	2-4
Fine Gravel	4-6
Fine Gravel	6-8
Medium Gravel	8-11
Medium Gravel	11-16
Coarse Gravel	16-22
Coarse Gravel	22-32
Very Coarse Gravel	32-45
Very Coarse Gravel	45-64
Small Cobble	64-90
Medium Cobble	90-128
Large Cobble	128-180
Very Large Cobble	180-256
Small Boulder	256-512
Medium Boulder	512-1024
Large Boulder	1024-2048
Very Large Boulder	2048-4096



A = LONGEST AXIS (LENGTH)
 B = INTERMEDIATE AXIS (WIDTH)
 C = SHORTEST AXIS (THICKNESS)

