sedimenttransport Readme

To estimate how variation in fish visitation generates heterogeneity in disturbance over space and time, we set up transects perpendicular to stream flow (width 5.5 to 13 m) at five locations distributed throughout our 1.8 km study reach (Fig. 2), selected to represent the range of fine substrate habitats present in the river. Eight to 11 quadrats (0.25m2) were evenly distributed along each transect, approximately every 0.5 - 1 m. Within each quadrat, five bicolored and uniquely numbered 22 mm diameter flat metal washers were placed flat on the substrate surface in a cross orientation centered in the quadrat, with washers placed approximately 10 - 15 cm apart. We scored disturbance each morning by recording, as points, if each washer had been moved (1 pt), flipped over (1 pt), buried with sediment (1 pt), or was now in a divot (1 pt); total disturbance was the sum of all washers in the quadrat (4 pts/washer × 5 washers = max 20 pts). After scoring, washers were reset or replaced with minimal disruption of the sediment. We did not observe scores higher than 12 because it was unlikely that all washers experienced each of the four disturbance categories. We monitored disturbance transects daily during two periods (6-16 June and 12-26 July 2009). A flash flood event on 25 June 2009 ended the first study period, and deposited approximately 1-2 cm of fine sediment and coarse organic matter over most benthic surfaces. Return time was calculated as the average time between scored disturbances within a study period. Frequency of high disturbance was calculated as the number of disturbances with scores greater than 4 divided by the total number of observations.

Column headers

Date: monitoring date, observations were typically performed in the morning at each transect

Transect: 5 transects were dispersed across the soft sediment areas of the study reach. Transect 1 is most upstream, transect 5 is most downstream

Quadrat Distance (m): sequential quadrats were placed adjacent to each other along the transect

Score: cumulative score for washers within each quadrat

Longitude: transect longitude

Latitude: transect latitude