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WV, 25755. **Watershed disturbance effects on total suspended solids and
substrate stability in a headwater stream.**

Freshwater ecosystems are known to be impaired by disturbances within their watersheds. These disturbances may result from multiple sources ranging from resource extraction to development (e.g. urban, residential, industrial, and commercial). Even low level disturbances have been shown to result in impairment to stream biota within the watershed. However when very low levels of disturbance occur, the mechanisms, resulting in impairment to the biological integrity of the freshwater ecosystem, are not known. The objective of this study is to examine the immediate effects of an anthropogenic disturbance of less than 1% of the watershed area. Baseline conditions were established and total suspended solids (TSS) and substrate mobility, were monitored and compared between pre and post disturbance conditions. Disturbance was created by timbering a 0.24 acre area in the 89 acre watershed. The stream was separated into three different reaches: Site 1 (the downstream recovery reach), Site 2B (immediately downstream of disturbance reach), and Site 3 (the upstream control reach). The data shows variation, at the sites, in suspended and settled sediment as indicated by TSS and substrate mobility. Sites downstream of the disturbance, Site 2B and Site 1, increased in substrate mobility compared to the up gradient site (Site 3). Suspended sediment increased at all three sites post-disturbance.