



SEDIMAT[®] - Case Study

SEDIMAT was developed and tested under field conditions at eight different streams in central and western New York State during 1992. The amount of fine sediment (sand, silt and clay) in the streambed immediately downstream from the work sites was measured before and after the construction. At seven of the sites, the disturbance was the excavation of a four foot deep trench for the installation of a natural gas pipeline which was followed immediately by backfilling. At the eighth site the disturbance was extensive hand digging by shovel. These streams varied in width from 10 to 75 feet and in depth from 6 to 24 inches. Velocities ranged from 0.8 to 3.3 feet per second. Trout were present in most of the watersheds, if not at the test sites specifically.

Before construction, the average percent of sediment fines in the streambed just downstream of the work site was 12.2%. After construction, it rose slightly to 14.7%. Both concentrations of sediment represent levels conducive to trout reproduction (egg survival). In contrast, there were locations at six test streams that were subject to the disturbance but which were not protected by the mats. These were primarily areas between the edge of the trench and the upstream edge of the mats, or off to a side where mats were purposely not laid. After construction, the average percent of sediment fines at these unprotected sites rose from 11.5% to 24%. This post construction level of sedimentation is an amount which has been repeatedly documented to cause major declines in trout reproductive success. A comparison of the two before and after sediment concentrations indicate the mats trapped about 80% of the disturbed sediment and prevented or minimized adverse impact to trout reproduction.

Individual mats were able to trap and remove between 500 and 1,000 lbs. of sediment each and did not interfere with construction operations. Because they were laid flat on the streambed, they were not affected by water velocity, nor did they raise water levels and thus flood the work area. SEDIMAT is a valuable tool for stream protection due to its low cost, simplicity, versatility and effectiveness.