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Testing the Bottle Trap Method for Sediment Deposition[1] SOPHIA SAUCEDA, Texas Lutheran University, O'DONNELL FRANCES, SHEPHERD STEPHANIE, Auburn University — Land use change from forest to agriculture or urban development results in soil degradation and erosion. One way to quantitatively assess sediment accumulation is the bottle trap method. This method is proven to work in a lake environment, however, not much is known about its efficacy in the wetland environments. To test the performance of bottle traps, we installed 6 traps in a controlled sediment basin at the National Center for Asphalt Testing (NCAT). We measured total sediment mass and grain size distribution in sediment traps. Total suspended solids and core samples of the bottom of the basin were taken for comparison with the sediment collected in the bottle traps. Grain size distribution is consistent across the core and bottle samples showing silt and sand size particle are deposited in the basin and captured in the sediment traps. Clays and to lesser extent silts are in suspension in the water samples over the period of the experiment. We have calculated the mass per area of sediment deposition measured in the bottles, but it was much smaller than the sediment per area loaded into the sediment basin and more analysis of the particle size distributions is needed. Initial results indicate the traps are working efficiently however, in the future we need to analyze the particle size distribution information to determine if we are getting the fraction in the bottle so we can credit reliably what is going to settle out and where.

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