

Presenter	Mark Southerland Versar, Inc.
Type	oral presentation
Category	Effectiveness of Monitoring Protocols
Title	<i>Showing a Restoration Benefit: The Easy, the Not So Easy, and the Very Hard</i>
Abstract	<p>It is critically important that restoration practitioners be able to show a tangible benefit of their actions to water resource managers and the public at large. Only then will the public support restoration on the scale needed. The challenge for practitioners is also one of scale, as showing a restoration benefit is harder on the large spatial scales of interest and in the short time frames desired. We argue for a conceptual framework that acknowledges what kinds of restoration benefits are easier and harder to demonstrate. We present a design for restoration monitoring in that includes what is</p> <ul style="list-style-type: none"> • Easy – measuring what you actually did (e.g., changed the stream channel shape) • Not So Easy – measuring the proximal effect of that change (e.g., reduction in sediment load from bank erosion) • Very Hard – measuring the ultimate effect on a resource of interest (e.g., improvement in the biota expected from a decrease in sedimentation) <p>Detailed geomorphic monitoring, including surveys of permanently monumented cross sections, is often a basic component of the easy restoration monitoring. Both qualitative and quantitative monitoring (assessing water quality and physical channel conditions) attempt to measure the change in sediment loading. Spring benthic macroinvertebrate and summer fish sampling address the expected recovery of the biota. We discuss the implications of using this three-tiered design in small Frederick County watersheds and at larger scales, such as restoration of the Chesapeake Bay and its tributaries.</p>