Plenary Speaker – Nathaniel (Than) Hitt

US Geological Survey Leetown Science Center
11649 Leetown Rd.
Kearneysville, WV 25430
(304) 724-4463
Email: nhitt@usgs.gov

Abstract title: Forecasting brook trout stream responses to climate change
Forecasting effects of climate change for brook trout requires an understanding of how stream temperatures respond to air temperatures (i.e., thermal sensitivity). We measured air-water temperature relationships within Shenandoah National Park streams and assessed variation in thermal sensitivity within and among watersheds. Stream temperatures in the study area were generally less sensitive to air temperature than previously assumed and we attribute this to the moderating effect of groundwater discharge at many sites. As a result, our predictions of future habitat loss were less pessimistic than those derived from prior research. However, our analysis also revealed spatial variation in thermal sensitivity that will forecast fragmentation of currently suitable habitat. Habitat fragmentation from thermal barriers should therefore be considered in research and monitoring designs for brook trout.