

GARRETT HOOVER, Dept of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV, 26074, and JAMES WOOD, Dept of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV 26074. Stream assessment goes local—identifying regional drivers of water quality to inform management for local watershed groups.

Two non-profit organizations in southwestern Pennsylvania requested water quality data for several local watersheds in need of conservation attention. We conducted a study to identify the primary drivers of stream ecological condition in each watershed to inform future management decisions. Our study consisted of land cover analysis, routine water chemistry monitoring and macroinvertebrate assessment of 20 stream sites within the Upper Ohio-Wheeling subbasin in southwestern Pennsylvania and the Northern Panhandle of West Virginia. We ranked land cover classes and water chemistry parameters for their predictive strength of macroinvertebrate diversity and biomass. We also matched prevailing macroinvertebrate life history traits with multiple time series of water chemistry data to further deduce the environmental conditions characterizing the biotic communities of each site. Our study aims to help each non-profit group prioritize conservation actions within their watersheds. Furthermore, we hope to provide a template for localized conservation assessment in an understudied region under mounting threat of degradation from hydraulic fracturing.