

American Fisheries Society (AFS) Meeting – 2015 – Portland, Oregon

145th Annual Meeting - August 16-20, 2015

Abstracts due Friday March 13

Abstract text – 200 words

Title: **Mapping Watershed Integrity for the Conterminous United States.**

Authors: Darren J. Thornbrugh^{1*}, Scott G. Leibowitz², Joseph E. Flotemersch³, Ryan A. Hill¹ and John L. Stoddard²

¹Oak Ridge Institute for Science and Education Post-Doctoral Fellow c/o USEPA NHEERL - Western Ecology Division. 200 SW 35th St., Corvallis, OR, 97333, USA

²U.S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, 200 SW 35th St., Corvallis, OR 97333, USA

³U.S. Environmental Protection Agency, Office of Research and Development, 26 W. Martin Luther King Dr., Cincinnati, OH 45268, USA

*Corresponding Author: Darren Thornbrugh, Oak Ridge Institute for Science and Education Post-Doctoral Fellow c/o USEPA NHEERL - Western Ecology Division. 200 SW 35th St., Corvallis, OR, 97333, USA; 541-754-4833; thornbrugh.darren@epa.gov

Abstract

Watersheds provide a variety of ecosystem services valued by society. Production of these services is partially a function of the degree to which watersheds are altered by human activities. In a recent manuscript, Flotemersch and others (in preparation), defined watershed integrity (WI) as the “capacity of a landscape, contributing surface water to a single location, to support and maintain the full range of inherent ecological processes and functions essential to the long term sustainability of local biodiversity and the watershed resources and services provided to society.” Six key functions must be present for a watershed to have integrity: hydrologic regulation, regulation of water chemistry, sediment regulation, hydrologic connectivity, temperature regulation, and habitat provision. We developed and mapped an index of WI for the conterminous USA (CONUS) based on these six key functions by incorporating human landscape stressors that have been shown to degrade key functions in watersheds. A WI index and map for the CONUS provides a consistent way to compare WI across the nation. The WI index can also be decomposed into specific factors that influence index scores that can be targeted for adaptive management by informing protection, rehabilitation, and restoration efforts in watersheds.

(Currently at 195/200 words)