

Watershed Integrity: Refinement and Case Study

Development (position EPA-ORD-NHEERL-WED-2018-06). Under EPA's Safe and Sustainable Water Resources National Program, an Index of Watershed Integrity (IWI) has been defined ([Flotemersch et al. 2015](#)) and mapped for the conterminous US ([Thornbrugh et al. 2018](#)). This research project may consist of the following four elements: (1) Enhancing the IWI map -- The original IWI map was based on hypothesized relationships between stressors and ecological functions, using first order, linear assumptions and no weighting. An approach to enhancing the IWI map by defining empirical relationships using random forests has been developed for the water quality function (Johnson et al. submitted). The research participant may be involved in enhancing the IWI map by more accurately characterizing the relationships between stressors and the remaining five functions that are incorporated into the index using literature and available data; (2) Testing the IWI map -- The IWI map has been tested by comparing results to stream condition data from case study watersheds and national surveys ([Kuhn et al. 2018](#); [Thornbrugh et al. 2018](#)), and in conjunction with #3 below, the research participant will acquire regional data to further test the IWI maps; (3) Regional applications -- The research participant may develop one or more regional case studies demonstrating the utility of the IWI maps for aquatic resource management; and (4) Temporal change -- A map of partial change in IWI over time with respect to specific stressors may also be produced, dependent on the availability of new spatial datasets. The full project description can be found at <https://www.zintellect.com/Opportunity/Details/EPA-ORD-NHEERL-WED-2018-06>.

Please share this with any colleagues that you think might be interested. Questions on the application process should be addressed to ORISE at Zintellect@oraui.org. Technical questions concerning the position can be obtained by contacting me at leibowitz.scott@epa.gov. Note that applicants must have received a Doctoral Degree within the last 60 months and must be a U.S. citizen or Lawful Permanent Resident.

Thank you.

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