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The title of this article is “Multi-Objective Optimization for Selecting and Siting the Cost-Effective BMPs by Coupling Revised GWLF Model and NSGAII Algorithm”. This is a very recent paper published a few weeks ago. The authors Zuoda Qi, Gelin Kang, and Xiaojin Wu are all PhD students at Nankai University in Tianjin China who work with Professor Yuqiu Wang.

This article is an excellent way to take watershed management research a step further, by combining surface water quality modeling with economic models to forecast cost-effectiveness. This is a great article for anyone who wants to develop a more robust watershed model with limited data.

This paper describes several popular optimization strategies: one being non-dominated sorting genetic algorithms II (NSGAII). You would use this to identify the most optimal solution when used with another model. For example, many people use this with the SWAT model. The methods used here are specifically for point source BMPs of important techniques, advances, model components. **For the understanding of hydrologic and physiochemical watershed dynamics** they use the Generalized Watershed Loading Function model, which utilizes less data than other watershed models yet also provide a stable robust output.

Their model was robust in the sense that they use several tasks to accomplish their research target. Their goal was to identify the optimal spatial location of BMPs for dissolved nitrogen. My only critique is that is that they could have assessed more BMPs: for example, comparing grey infrastructure to green infrastructure for pollutant attenuation.

The fundamental idea tackled here is that future watershed models must consider multiple facets that affect watershed management, besides water quality. Through the coupling of the watershed model and optimization algorithm, we can analyze trade-offs between BMPs and help research influence watershed management.

This issue is especially pertinent to water quality and modeling because we need to consider the possibilities of BMP optimization to assist in decision making. Since our goal is to create a cost-effective watershed management plan, future models should consider taking cost effectiveness into every scenario.