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Designing Monitoring Programs to Evaluate Bmp Effectiveness: Lessons from CEAP

Nancy Mesner, Ginger Paige, and Andree' Walker

Abstract Text:

A large variety of Best Management Practices (BMPs) have been developed and implemented to address water quality impairments. The effectiveness of many of these BMPs in reducing pollutant loads in specific settings is often not well characterized. Monitoring and modeling approaches are often used to assess BMP effectiveness; however, these approaches often do not adequately target the water quality issue or BMP of concern. The most common mistake is a failure to carefully consider the original BMP objectives, failure to understand the dynamics and transport processes of the pollutant of concern in the particular watershed, and failure to consider alternate methods for demonstrating impact. Based on our recent work in designing and assessing monitoring programs, we have developed a guide to assist watershed managers in designing appropriate and effective monitoring strategies which will meet specific project objectives. The guide is not intended to replace existing high quality guidance documents but is primarily directed at monitoring and modeling for BMP effectiveness. The guide is currently being evaluated by USEPA Region 8, Utah, Idaho, and Wyoming Departments of Environmental Quality, NRCS and USGS personnel, and other professionals currently struggling with the implications of poorly designed and implemented monitoring programs. This talk will present an overview of principles developed within the guide and will provide several specific examples from western landscapes.

Impact Statement:

Existing water quality monitoring programs often fail to adequately quantify responses of water quality to BMP implementation. This work will help in better targeting monitoring efforts, so that we will know the effectiveness of existing BMPs under specific watershed conditions. This, in turn, will improve implementation strategies in watersheds, so that we place the best possible BMPs in the best locations. We see this project resulting in significant savings in monitoring programs and in the actual implementation of BMPs, ultimately resulting in better use of finite financial resources and improved water quality.