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**Analysis of BMP Implementation, Performance, and Maintenance in Spring Creek,
an Agriculturally-Influenced Watershed in Pennsylvania, a CEAP Research**

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Abstract Text:

Assessing the performance of conservation Best Management Practices (BMPs) in agricultural watersheds across the U.S. is extraordinarily difficult because of the diversity of conservation practices, the variety of hydrogeomorphic (HGM) settings in which they are implemented, and the breadth of geographic regions involved. Spring Creek watershed, an intensively studied 11-digit HUC watershed in central Pennsylvania, has the necessary long-term data on water quality for assessing a suite of BMPs in an agricultural watershed, primarily extensive streambank fencing. In this project, we have selected experimental units to focus our data collection and analysis on BMP performance, and factor out the impact of underlying HGM variation. Using a combination of field data, landscape analyses, and hydrologic modeling from the experimental reaches and other watershed segments, we are determining if evaluations at the reach scale can be compiled predictively to characterize the condition of watersheds. By combining ground-based measurements with fine-resolution LIDAR and digital photography data, we will be able to more precisely map topographically and hydrologically distinct reaches (e.g., HGM settings) that vary in their response to BMPs both spatially and temporally. Building on recent surveys in Spring Creek, new focus groups, interviews, and surveys will be conducted to gain more understanding about the motivations of landowners to participate in BMP implementation, maintenance, and monitoring.

Impact Statement: