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Assessing the spatial distribution of BMPs relative to critical areas: Results of a CEAP project in northern Utah

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Abstract Text:

We conducted an assessment of the spatial distribution of Best Management Practices (BMPs) implemented along the Little Bear River (LBR) Watershed and its relationship to areas that were identified as more prone to negatively influence water quality conditions. During the 1990s, BMPs were implemented within the LBR as part of a federally funded, voluntary cost-share program that aimed towards the improvement of water quality conditions along the watershed. Based on official government files, we compiled available data on the types, characteristics, location, and timing of the practices included in landowner contracts. The spatial location of the practices implemented was digitized and a geo-database of planned BMP contract practices was created. However, it is recognized that planned practices are not always fully implemented and that there are some discrepancies between official records and the reality of what was implemented. To corroborate the official records with what actually took place on the ground and to assess what practices continue to be used, we conducted semi-structured interviews with landowners that participated in this watershed program. A second geo-database was then created based on landowners' recollection of what was actually fully implemented and which practices were still being maintained on their properties. An overlay of the spatial location of planned, actually implemented, and still maintained BMPs was compared with a map of the areas identified as the most critical in terms of susceptibility to agricultural land use and in their potential to impact water quality. This spatial assessment is critical to assess whether or not the BMPs implemented actually targeted the areas where they were most needed, and to assess the extent to which observed water quality change is associated to BMP implementation. It is also valuable to assess whether spatial factors (e.g., distance from a body of water or distance from a critical area) influence BMP implementation and maintenance.

Impact Statement:

This spatial assessment is critical to assess whether or not the BMPs implemented actually targeted the areas where they were most needed, and to assess the extent to which observed water quality change is associated to BMP implementation. It is also valuable to assess whether spatial factors (e.g., distance from a body of water or distance from a critical area) influence BMP implementation and maintenance.