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Riparian Buffer Strips' Capability of E. coli Removal in New York Streams

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Abstract : The purpose of this study is to ascertain whether riparian buffer strips could be used to reduce Escherichia Coli (E. coli) runoff into streams in Central New York. Mainstream methods currently utilized to reduce E. coli runoff include fencing and staggered fertilizing plans for agriculture. These methods still do not significantly limit E. coli and thus, pose a serious health risk to individuals who swim in contaminated waters or consume contaminated produce. One additional method still in research development involves the planting of vegetated riparian buffers along waterways. Currently, riparian buffer strips are primarily used for filtration of nitrate and phosphate runoff to slow erosion, regulate pH and, improve biodiversity within waterways. For my research, four different stream sites were selected for the study, in which rainwater runoff was collected at both the riparian buffer and the E. coli sourced runoff upstream. Preliminary results indicate that there is an average 70% decrease in E. coli content in streams at the riparian buffer strips compared to upstream runoff. This research could be utilized to include vegetated buffer planting as a method to decrease manure runoff into essential waterways.

Keywords : Escherichia coli, riparian buffer strips, vegetated riparian buffers, runoff, filtration
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