

Water Quality Monitoring and Its Relationship to Riparian Buffer Zones

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Purpose: A comprehensive volunteer water monitoring effort can expand the knowledge base of the scientific community by filling important gaps in data collection and potentially identify the value and effect of riparian buffer zones on water quality. These citizen science efforts can be used to inform future protective actions on waterways, and encourage broad community engagement in conservation efforts.

The scope of the Nanticoke Watershed Alliance's water monitoring efforts includes four years of data collection throughout the Nanticoke River watershed, including 38 river sites and six agriculture sites. The monitoring procedures have received EPA approval and over 60 volunteers have been trained and collect samples according to this rigorous protocol. Our program augments the state water monitoring effort, which includes only two sites on the river.

Methods: Citizen volunteers monitor water clarity, dissolved oxygen, salinity, bacteria, and nutrients bi-weekly using meters, secchi disks, and laboratory samples. In addition, constant public outreach occurs through the use of "river report cards," a farmer filter strip incentive program, and public-focused programs based on river access and awareness.

Results: At present the Nanticoke River is the healthiest major river in the Chesapeake Bay watershed. Throughout the lifespan of the Creekwatcher program on the Nanticoke we have seen increased interest and awareness in the health of the river.

Conclusions: Water monitoring efforts are intended to ascertain progress, or the lack thereof, and to encourage conservation activity at the individual, organization, and government level. Riparian buffers are wide and abundant throughout most of the Nanticoke system. Water Quality Monitoring activity points to their effectiveness as natural filters and encourages their continued conservation in the future.

Recommendations: A vibrant water monitoring effort, if rigorously applied, will increase conservation efforts, highlight the importance of riparian buffers on water quality, and focus resources on conservation resulting in healthier water and the land protection afforded by functioning and robust buffers.

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