

# Urbanization, Stream Buffers, and Stewardship in Maryland

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**T**he stream buffer is the region immediately beyond the banks of a stream that serves to limit the entrance of sediment, pollutants, and nutrients to the stream itself. When forested, a stream buffer promotes bank stability and serves as a major control of water temperature (Leopold, 1997). From a biological perspective, the importance of a healthy, intact riparian zone has only been understood for the last 20 years (Rapp, 1997).

Most counties in Maryland have some kind of regulations in place to keep development away from perennial streams and tidal waters, whether through local stream buffer, steep slope, flood plain or critical area ordinances. However, the quality and extent of the buffer varies markedly across the state.

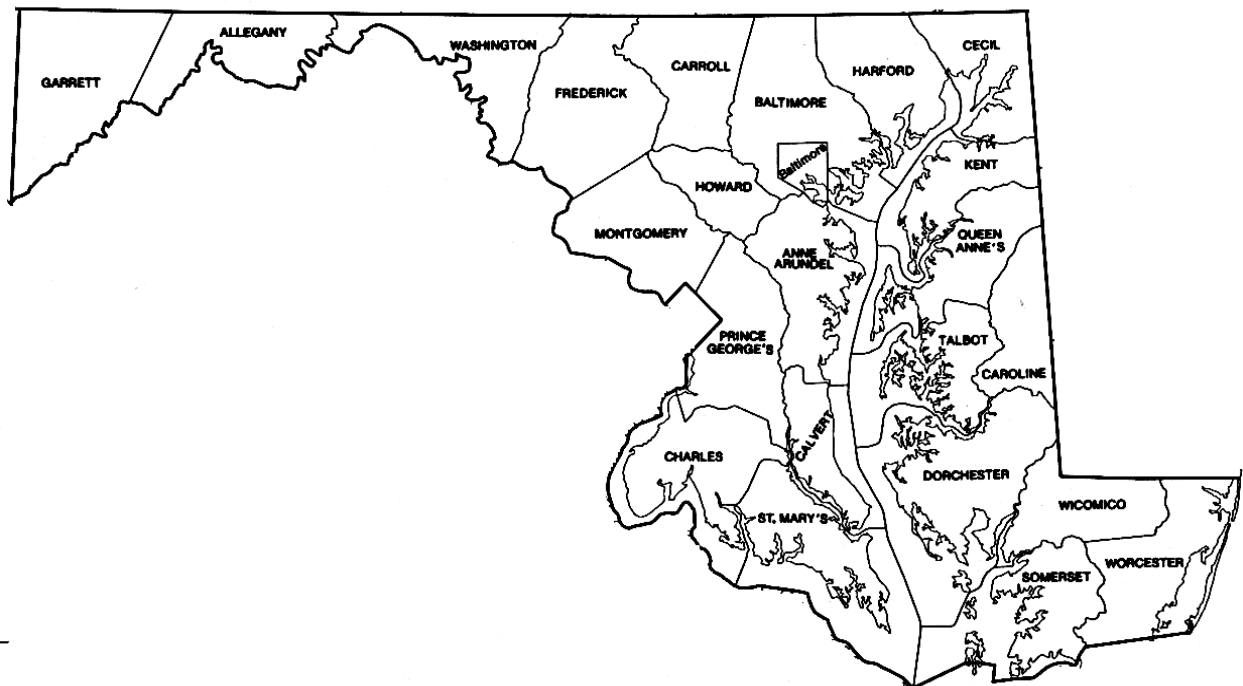
This note documents recent trends in land conversion in urban, suburban and rural counties in Maryland, with a strong emphasis on how these changes have affected land cover within the stream buffer zone. The study examines how the composition of land cover in

the buffer zone changes in response to development, with respect to forest, agricultural and urban cover within 100 feet of each streambank.

## *Methods and Data Sources*

This study was based on analyses performed with a Geographic Information System (GIS). The key data source for land use was the Generalized Land Use coverages produced by the Maryland Office of Planning (MOP) for 1990, 1994, and 1997. These data were derived and interpreted from high altitude aerial photography and satellite imagery (SPOT 1994 and 1997) with a 10 acre minimum mapping unit. Land use was classified by 24 different descriptors, but was more broadly reclassified as urban, agricultural, or forest for purposes of this study.

Stream locations within Maryland were determined from U.S. Environmental Protection Agency River Reach files (Dewald & Olsen, 1994). The modified GIS produced a digitized version of the Maryland



**Figure 1: Map of Maryland Counties Analyzed in the Article**