

Accotink Creek Natural Stream Restoration

For generations, Accotink Creek wound quietly through forests in what is now the City of Fairfax as it flowed from the Northern Piedmont of Virginia to the Potomac River. As adjacent neighborhoods grew over the years, reduced shoreline vegetation and alterations in the stream's channel upset the stream's delicate flow equilibrium. Residents were left with frequent flooding problems, sediment laden street crossings, and steadily worsening erosion. Today, Accotink Creek has regained much of its original stability, thanks to a stream restoration program that uses a carefully planned combination of geomorphologic, bioengineering, and construction techniques. Many long-term effects of urbanization have been reversed with relatively inexpensive, almost self-maintaining, stream restoration. Instead of channels lined with concrete or riprap and an underground stormwater detention system, the City explored stream restoration as an approach to the resident's problems. Stream restoration uses natural materials to stabilize channels, so for Accotink Creek, coconut-fiber biologs were used at the water's edge to eliminate undercutting of the banks. To stabilize the outside portion of channel bends, root wads were used. Root wads are trees that have their trunks embedded in the stream bank with their root fans exposed to the stream flow. This use was cost-effective, because trees, which would otherwise need disposal, were used as a construction material. Rocks were individually placed to divert stream flow from the edge of the channel to the center of the stream. Heavy planting and seeding of native vegetation completed the channel restoration.

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