

Getting to the root of a problem

By Jamie Blaine

Armed with shovels and youthful enthusiasm, about 80 elementary school students from the West Chester Area School District will soon help rebuild critical infrastructure that has recently been destroyed. No, they will not be going to New Orleans or Mississippi, but rather to the banks of historic Taylor Run, a tributary of the East Branch of Brandywine Creek that runs through the Stroud Preserve near Marshallton, where, on Tuesday, they will plant hundreds of trees.

The students are part of a volunteer effort that includes other school groups, home schoolers and scout troops. Their goal is to plant 6,000 trees on the Stroud Preserve this fall — and that in turn is part of much larger regional project, called TreeVitalize, that seeks to plant more than 20,000 shade trees and 2,000 acres of stream-side forest buffers across Southeastern Pennsylvania. It is a vital and long-overdue endeavor to replace some of the more than five million trees that have been lost to this region in the last 15 years alone.

Planting trees, no less than building roads and bridges, is an investment in infrastructure, but unlike roads and bridges, trees are part of a vast natural system that historically provided economic and other benefits whose true value we are only beginning to comprehend. That probably explains why, for centuries, humans have been dismantling that network in pursuit of short-term gains at the expense of long-term health, including that of humans.

Trees provide an array of services. They save energy, muffle noise, cut carbon dioxide in the atmosphere, and reduce exposure to cancer-causing ultraviolet light. A recent study by the University of Pennsylvania showed that trees increased housing values in the Kensington section of Philadelphia by almost 9 percent, or an average of \$3,400.

Perhaps nowhere is the value of trees greater than in their contributions to clean water. They are natural filters that reduce erosion, minimize the effects of flooding, and intercept pollutants before they reach the stream. Their shade maintains cool water temperatures and

rich oxygen levels. Their leaves provide food and habitat for fish and other animals, thus helping to ensure the diversity that is essential to a healthy ecosystem.

Trees do more than keep pollutants out of streams; they enhance a stream's ability to clean up the pollutants that do get into the water. In a study published last fall, a team of scientists from the Stroud Water Research Center in Avondale discovered that streams flowing through forested land have a significantly greater ability to process organic matter and pollutants than do their unforested counterparts.

While economists are busy trying to calculate the full value of those "ecosystem services," we

already know that the savings are huge. A national study done in 2004 by the American Water Works Association, for example, found that "for every 10 percent increase in forest cover in the [drinking water] source area, treatment and chemical costs decreased approximately 20 percent. ..." And

New York City is spending almost \$1 billion to protect its water sources in the Catskill Mountains — because the alternative is building a filtration plant that would cost several times that.

Historically, both in this country and around the world, policies aimed at providing sufficient and clean fresh water have focused on enormous engineering projects, including dams and filtration plants. Such policies not only have ignored the substantial benefits that natural ecosystems deliver, but also have hastened the destruction of a living and regenerating infrastructure and replaced it with one that is both more expensive and less effective (as attested by the recent decision by the government of Seoul, South Korea, to spend \$350 million to tear down a highway and restore the stream it buried 50 years ago). As participants in the TreeVitalize program, which Gov. Rendell launched last year, the West Chester students are taking part in a movement to reverse the economically and environmentally ruinous process of substituting multibillion-dollar construction projects for natural infrastructure and to tap instead the benefits that nature provides free of charge.



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