

Seeing the Forest for the Trees **by J. Willoughby, ICPRB**

Trees have become one of the poster children for clean water, with their inexpensive price tag, long life spans, and numerous benefits for water quality. Watershed groups, government groups, including ICPRB, and others have helped fuel this effort by hosting tree planting events, assisting with funding for riparian buffers, and even collecting seeds and nuts.

Just how good are trees for the watershed? “Trees help keep pollution out of the rivers by minimizing runoff. Fewer trees means less protection,” said Kate McNamee, Potomac Conservancy’s Growing Native outreach coordinator. Trees can also save money by keeping waterways cleaner and reducing soil erosion and energy costs, among other benefits. From seeds and seedlings to mature forests in urban and suburban areas, Watershed groups, government agencies, and individuals are using trees in a variety of landscapes to improve their communities both environmentally and economically.

Riparian Buffers

Since 2002, the Potomac Watershed Partnership and Potomac Conservancy has led Growing Native, an effort that brings volunteers throughout the Potomac watershed together to “Get Nuts for Clean Water.” With autumn volunteer seed collection events in West Virginia, Virginia, Pennsylvania, and Maryland, the nearly 10,000 pounds of seeds collected through the Growing Native program in 2008 will go to their respective state nurseries. They will grow at the nursery for about one year. Most of the Growing Native seeds are destined to become seedlings in riparian buffers, areas of stream-side shrubs and trees. With each costing under one dollar, they are just the right price.

While seedlings help recreate riparian buffers, conserving the existing stream-side vegetation is one of the most important factors in maintaining waterway health. Seedlings take years to fill in and produce more offspring. Ideally, riparian buffers should be left in place when developments are created, but it’s far easier and less expensive to mow down the trees that are there and simply plant grass to the stream edge. According to the State of Chesapeake Forests Report by The Conservation Fund, “Urban and rural forests are critical to reducing stormwater runoff from small storms—storing and filtering up to six times more rainfall than grass and 20 times more than a parking lot.”

It takes political will to decide that mature riparian buffers will stay and developers must work around them. Frederick County, Md., has just passed an ordinance that ensures a 100-foot minimum stream buffer for all new development on subdivided parcels. As the slope increases, the buffer requirement also increases, up to nearly 330 feet in some cases. The buffer must remain intact, save for a few exceptions, such as utilities, bike trails, and other

necessary infrastructure. Buffers cannot be removed and then replanted. Frederick County Principal Planner Tim Goodfellow said, "We feel that it will prevent further degradation of our waterways by maintaining larger distances between grading, construction, and other building activities and our sensitive aquatic resources. It will provide a wider area for infiltration and groundwater recharge." Similar ordinances exist in many Potomac watershed jurisdictions, such as Montgomery County, Md., and Northumberland County, Va.

Urban and suburban forests are equally important as riparian buffers to watershed and for human health. According to the State of Chesapeake Forests report, reducing forest land in a watershed by only 10 percent can mean a 40 percent increase in nitrogen loads to the waterway. These increased loads can cancel out the large sums being spent to reduce nutrients under the Chesapeake Bay cleanup.

Shade Trees

Often overlooked are the mature shade trees that are lost to development or age. Saplings are often planted as replacements for these mature trees. Saplings, larger caliper young trees, fare a little better than seedlings because their tender buds and new leaves are higher up and out of the reach of hungry deer and are more difficult to run over with lawnmowers. Steve Saari, Washington, D.C. Department of Environment (DOE) Watershed Protection Specialist noted that as older, mature trees die in D.C., they are often replaced with small, ornamental trees that will not provide shade when mature. In addition, many ornamental trees are not as well-adapted to the region, where a native tree would thrive.

Casey Trees, through a grant from the DOE, has a three-fold program to increase the urban forest in the city and help homeowners pick the right tree for their landscape. Casey Trees' Director of Tree Planting, Jim Woodworth, noted that trees are important to the urban environment ~~because they instill a sense of~~ "neighborhood pride and aesthetics, they conserve energy, and improve water quality."

Through the program, Casey Trees first offers a \$50 rebate for trees planted on private property, from an extensive list of tree species. The second program is a homeowner design workshop, including where to plant a shade tree for maximum benefit. After finishing the workshop, homeowners get a shade tree delivered to their home. The third and most comprehensive program is RiverSmart Homes, currently a pilot project focusing on an area between Massachusetts and Pennsylvania avenues east of the Anacostia River. RiverSmart Homes involves a landscape audit by DOE after which, homeowners are offered a range of improvement strategies for free up to a total of \$1200. Shade trees, rain barrels, rain gardens, native landscaping, and conversion of impervious pavement to pervious pavers are all part of the program. Beginning in spring

2009, homeowners throughout the city will have the opportunity to enroll with DOE for watershed-wise upgrades tallying up to \$1,200. They also learn the “hows” and “whys” of their new green landscape.

Pennsylvania also is working on its own TreeVitalize program throughout the state. “We were seeing alarming losses of tree cover in urban areas,” said Christina Novak, Pennsylvania Department of Conservation and Natural Resources (DCNR) press secretary. Piloted first in Philadelphia and Pittsburgh, the program is expected to expand to 12 other urban areas throughout the state in the coming years. TreeVitalize was conceived by the Pennsylvania DCNR and works with partners to achieve the goal of 1,000,000 trees planted by 2012 by restoring both riparian buffers with seedlings and reclaiming public urban space with saplings. Though none of the targeted urban areas are in the Potomac watershed, most are in the Chesapeake Bay watershed and will contribute to its overall health.

Putting dollar amounts on trees can be tricky, but the TreeVitalize website cites that the loss of trees in the Delaware Valley meant, “the capacity to detain stormwater was diminished by 53 million cubic feet annually, a \$105 million service. Each year 1.7 million pounds fewer pollutants were absorbed, a \$3.9 million service, and 1,373 tons less carbon was captured in the making of wood.” In addition to the money trees can save, they also improve quality of life by “increasing property values, calming traffic, and reducing stress,” according to the TreeVitalize website.

Patchwork Forests

Low-impact development, solar upgrades, and wind power have dominated the “green” news lately. These building technologies are a terrific advancement and in the future, their costs will be affordable to the masses. However, the most cost-effective way to help the watershed and the wallet is maintaining the watershed’s forests.

Forestry for the Bay Coordinator Craig Highfield said, “according to modeling conducted at the Chesapeake Bay Program, 700,000 acres of existing woodlands are reducing the amount of nitrogen from the [Chesapeake Bay] watershed by 3.1 million pounds per year. Their conservation is, therefore, the best BMP for non-point pollution.” Best management practices, or BMPs, could include better farming techniques, settling ponds, septic pumping, and other practices that help reduce pollution. Highfield also noted that the total remaining forests in the watershed (24 million acres) prevent over 180 million pounds of nitrogen from reaching the Bay each year. That amount is over three times the annual nitrogen reduced from all sources over the past 20 years.

Trees play an important role in our ecosystem, but they also are an important part of our lives. “They also are already safeguarding wildlife habitat, contributing

annually to local economies, protecting public health by providing for clean air, providing recreation opportunities, and enhancing the quality of life for all citizens,” said Highfield. Forestry for the Bay, an outreach and education group for small forest landowners, helps keep small forests, well, forested. The program is open to anyone and the group will help forest landowners get resources and funding for forest plans, invasive controls, and other forest practices, and to help build a community of small forest landowners as mentors.

Forestry for the Bay, with its focus on the nearly 70 percent of Bay landowners that hold fewer than 10 acres of forest, may be saving more than just the trees. These intact forests literally sop up the excess nutrients from farms and urban and suburban lawns. Many Potomac subwatersheds have less than 10 percent forest cover with interior conditions, which means forests that can support animals and plants that require larger habitat where “extreme weather and predation” are minimized, according to the State of Chesapeake Forests Report. There will always be trade-off between development and trees. With so many flashy alternatives for going green and helping the environment, the easiest and most cost-effective option might be right under our noses, or, above our heads. Whether you live in an apartment in the city or own several acres of forest, there is plenty everyone can do to help the watershed and the wallet.